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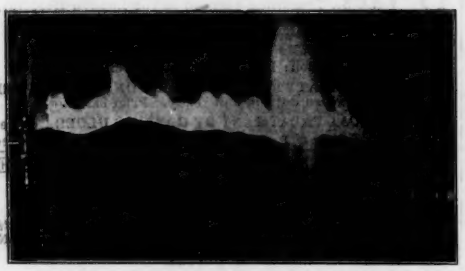

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HOEFFTCKE'S EXTENSION APPLIANCES.

DESCRIPTION OF

HOEFFTCKE'S EXTENSION APPARATUS

as applied in the Ambulatory Treatment of Fracture of the Limbs, Tuberculous and Arthritic Disease of Joints.

By C. A. HOEFFTCKE,
21, Woodstock Street, Oxford Street, London,
By Appointment to several Hospitals and Societies.

In addition to the technical description of my apparatus in THE LANCET, Jan. 28th, the use of my appliances will be described in THE LANCET on Feb. 25th, March 25th, April 29th, May 27th, June 24th, July 22nd, August 12th, Sept. 16th, Oct. 21st, Nov. 25th, Dec. 23rd of this year, on the page facing the Lecture page of the Journal.

In tubercular hip cases the object of my appliance is to permit the patients to walk about without crutches, or patten on the other foot, while it ensures that no weight is transmitted through the hip-joint. The weight of the body has to be taken off the hip-joint, so that the friction between the head of the femur and the acetabulum is prevented. Extension in the joint is produced by an arrangement whereby the leg is pulled downwards, using the ischial tuberosity and surrounding gluteal muscles as resisting point (see also description in LANCET, 28th Jan.) In case the head of the femur is partly absorbed, the object of the extension is to prevent the bone from displacement upwards; in other words, to prevent the diseased side getting shorter.

If friction is prevented between the bones and they are held in good position, the bones will tend to resume their natural shape, or round off, as the case may be.

The tubercular hip case illustrated in skiagrams Figs. 1 and 2 is one of active tuberculous hip disease, treated with my extension splint, which was ordered by the family doctor in consultation with two surgeons. Skiagrams were taken every four months in this case to show the result of the extension.

FIG. 1. HOEFFTCKE'S APPLIANCE PUT ON JUNE 17th, 1909.

My appliance was put on the 17th June, 1909 (Fig. 1), and now, after one year and eight months' time, the result is as shown in Fig. 2. By means of the extension a travelling acetabulum has been prevented and what was left of the head has rounded off nicely, a good movable joint being formed.

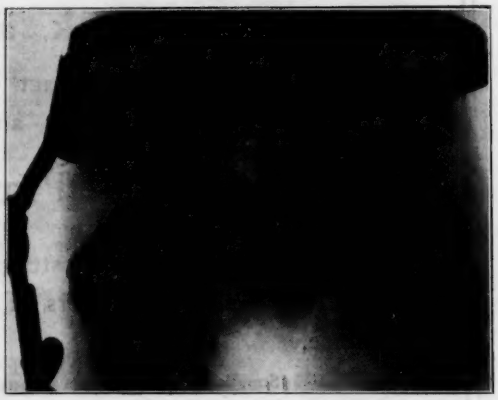

FIG. 2. SKIAGRAM TAKEN SHOWING PROGRESS OF JOINT, FEB. 11th, 1911.

This patient is a particularly lively boy, and has walked about the same as other boys of his age, without any pain or discomfort while wearing the appliance. There is no restriction in either flexion and extension, or abduction and adduction.

The appliance is made of leather and steel, and very lightly constructed. It can be adjusted in every direction. The steel bands, which are embedded in the leather for strengthening purposes, are showing in the skiagram.

In Fig. 1 the dots on the joint show the amount of extension given. (This case was illustrated also in the *British Medical Journal*, March 19th, 1910.)

The movement in the hip-joint can be restricted by means of a screw in the lateral joint opposite the great trochanter, or with the double elastic traction strap which fastens on to the thigh bucket and pelvic band on the posterior side.

This elastic traction strap can be adjusted so as to correct the contracture in the joint, while if the knee-joint is also contracted elastic traction can also be applied.

As soon as the pain has subsided in the joint and the bones are in good position, a certain amount of movement can be allowed and increased from time to time, so as to prevent the bones from getting ankylosed.

In some cases, however, where too much of the head and neck is absorbed to form a movable joint, ankylosis of the bones while kept in a good position by means of the extension is the most satisfactory result which can be obtained.

In many cases where there were old sinuses discharging, the improved circulation in the leg has caused the sinuses to close up within a short time, while in all cases the general health of the patient improves greatly by being able to walk about with the help of my appliance.

In tubercular knee cases the same appliance with extension is applied, but without a pelvic band.

The use of my extension appliance in arthritic disease of the joints has been recommended by many surgeons, and the results are indeed very gratifying. As soon as the weight is taken off the joint, the patient finds relief from the grinding pain, and is able to walk about as usual.

The appliance does not show, and ordinary clothes can be worn over it.

I shall always be pleased to send a detailed description with illustrations upon application, but in no case do I supply an appliance without medical supervision.

The next description on the Ambulatory treatment of contracted knees will appear March 25th.

As my work is strictly personal, I have taken over all interest in C. A. Hoefftcke Ltd., so that since Jan. 1st of this year, it is no longer a Limited Company.

Hunterian Lecture

ON

THE IMMUNITY REACTION IN DIAGNOSIS, ESPECIALLY OF TUBERCULOSIS AND SYPHILIS.

Delivered in the Theatre of the Royal College of Surgeons of England on Feb. 6th and 8th, 1911,

BY W. d'ESTE EMERY, M.D., B.Sc. LOND., M.R.C.S. ENG.,

PATHOLOGIST AND LECTURER ON PATHOLOGY AND BACTERIOLOGY AT KING'S COLLEGE HOSPITAL.

LECTURE I.

Delivered on Feb. 6th.

TUBERCULOSIS.

MR. PRESIDENT AND GENTLEMEN,—By the term "immunity reaction" I refer to the series of specific changes that occur when any infective agent attacks the living body. These are complex in the extreme, and differ greatly in the different diseases: the processes which take place in the tissues and in the blood as a reaction against the tubercle bacillus are quite different from those which are caused by the typhoid bacillus. The methods by which the various infections are combated differ very greatly, and this is a fact that we must never lose sight of in dealing with the problems of immunity and vaccine or serum treatment.

HYPERSENSITIVENESS AND IMMUNITY.

We have now realised that the process of cure of an infective disease involves two apparently opposed factors: on the one hand, an increase in the defensive forces, so that the body tends to become immune; and, on the other, a specific raising of the sensitiveness of the body to the microbe or its toxin, so that it tends to become *less* immune. The latter process, though it is not always easily recognised, appears to be an essential precursor or accompaniment of the first. It is called anaphylaxis (i.e., the opposite of prophylaxis), and its clearest illustration is seen in one of the diseases I am discussing in these lectures—tuberculosis. The first effect of a tuberculous lesion is to raise the susceptibility of all parts of the body to the tuberculous toxin. Indeed, this substance—tuberculin—is practically without action on a normal person; it is only when he is sensitised by a previous dose or doses that it becomes a real toxin. It would appear that this is a process in the highest degree disadvantageous to the patient, and so it is: the tuberculous fever, when not due to secondary infections, is apparently entirely an anaphylactic reaction to doses of tuberculin too small to have any action on a healthy person. But it appears that this stage is essential to the production of immunity; out of this nettle—danger—we pluck the flower—safety.

Both anaphylaxis and immunity are *specific*. A person who is sensitised or who is immune to tuberculin retains his normal susceptibility to other poisons. It follows, therefore, that either of these phenomena may serve us in diagnosis. If a clear and unequivocal demonstration of anaphylaxis or of immunity to tuberculin or to the tubercle bacillus is forthcoming, it is definite proof of an infection, present or past. The problem which I have to discuss is how far the one or the other may be employed in practice in diagnosing an active tuberculous lesion.

I may remark in passing that the two stages—hypersensitiveness and immunity—may coexist. Thus, a person who has been treated with large doses of tuberculin may contain in his blood much anti-tuberculin, so that he may no longer react to large doses. Yet his tissues may be anaphylactic, and the disease may still spread. In some diseases the problem is an easy one, but this is not the case in tuberculosis, at least in adults. The difficulty arises in part from the nature of the tubercle bacillus, which renders it in many respects a difficult organism to work with, but it is more specially due to the fact that the great majority of adults have already some degree of acquired immunity to the disease. Hamburger has recently shown that in the poorer parts of Vienna no less than 94 per cent. of children become tuberculous before the age of 14 years; these results have been questioned, but they were confirmed by necropsy, and although the disease may not be quite so prevalent in most districts, it is undoubtedly very common for children to have a small tuberculous focus, causing no apparent symptoms, and not recognised unless death is brought about by other causes and a necropsy is performed. Yet this mild and latent tubercle may profoundly modify the susceptibility of the tissues of the patient. And perhaps even more important from this point of view is the fact that almost everybody is constantly being vaccinated against the tubercle bacillus *viâ* the alimentary canal and respiratory organs. Milk, as you all know, very frequently contains bacilli, and they are commonly present in the dust of the air we breathe; the traditional peck of dirt must contain innumerable millions of tubercle bacilli. If this is so, it follows that most of us must be undergoing a constant course of immunisation against the disease, and I might suggest that it is the lack of this form of preventive treatment which accounts for the great frequency of the disease in childhood. Be this as it may, the fact remains that adults as a class show definite signs of having been rendered partially immune to the tubercle bacillus, and this renders the diagnosis by means of the immunity reaction in them more difficult and unsatisfactory than in children. Thus the cuti-reaction, or von Pirquet's reaction, which is entirely satisfactory in childhood, is of comparatively little value in adults.

CHANGES IN THE TISSUES.

The ultimate study of the processes which occur in any infective disease leads us to realise that, strictly speaking, no such thing as a local disease ever occurs. In all cases, however small the lesion, there are changes, often profound, in the blood and in all the tissues throughout the body. We believe, indeed, that the presence of a small and apparently quiescent tuberculous lesion may alter in an important way the method in which every portion of the body nourishes itself. These alterations in the tissues must almost necessarily affect the blood, and this again may react on the tissues, so that the whole process becomes one of extraordinary complexity. I allude to the alterations in the tissues first, since it is the tissues which elaborate the blood, so that changes in the blood (other than the presence of toxins, &c.) must necessarily be secondary to, and caused by, the changes in the tissues; and amongst the tissues in this connexion I must include the leucocytes, which appear to play a most important part in the elaboration of defensive substances. Furthermore, we must not forget that it is the tissues, the living and acting parts of our body, that have to be defended against attack. The blood, it is true, forms the first line of defence; the tissues are the country which the invader must conquer. The study of the way in which the tissues behave is therefore of the chief importance. Unfortunately it is much more difficult than the investigation of the blood, and our knowledge of it is much less advanced. Indeed, our knowledge of the altered behaviour of the tissues in infection and immunity was almost nothing until two or three years ago, and is due almost solely to recent researches on anaphylaxis, especially to tuberculin, as shown by the cuti- and ophthalmic reactions.

ANTIBODIES.

Owing to the ease in which it can be investigated, our knowledge of these conditions in regard to their effect on the blood is much fuller; we may sum it up in one word—the presence of antibodies. By an antibody we mean a substance which we find in the blood serum as the result of the presence in the body of a foreign proteid, which we term its antigen. Thus if we inject a foreign protein, such as egg albumin, we find that the blood serum acquires a new property, that of precipitating a solution of egg albumin, such as was used for the injection. Here the albumin is the antigen, and we assume that the new property is due to a new substance, an antibody, which we call precipitin. It is a matter of some importance to recognise that antigens are, as far as we know at present, always proteids, or substances closely allied thereto; never fats, sugars, alkaloids, or other simple chemical compounds. It is noteworthy, too, that antibodies are always specific; diphtheria toxin acting as an antigen leads to the production of diphtheria antitoxin, which has no action on the toxin of tetanus. Speaking of ultimate molecules, this rule is apparently absolute, but in

ordinary experience a pure proteid is never seen, and the protoplasm and toxins of bacteria are highly complex mixtures. This is the explanation of some of the apparent non-specificity of some of the antibodies as we see them in disease.

If an antigen and its antibody are mixed they will always unite, and when this happens the properties, chemical, physical, or physiological, of the latter, are more or less profoundly altered. It is on this alteration of the antigen that our classification of the antibodies depends. Thus we recognise the following:—

An Antibody Combined with an Antigen and the Result.

Antibody.	Antigen.	Action.
Antitoxin.	Toxin.	Neutralisation.
Precipitin.	Coagulable proteid.	Precipitation.
Agglutinin.	Cells, bacteria, &c.	Clumping.
Cytolysin (including bacteriolysin and hæmolysin).	,, ,,	Prepares cells, bacteria, &c., for solution by complement.
Opsonin.	,, ,,	Prepares cells, bacteria, &c., for ingestion by leucocytes.

I include opsonin as an antibody, but with a certain amount of hesitation. It is not certain that it is an antibody, one of the reasons being that all persons contain in their serum a considerable amount of opsonin to the ordinary pathogenic bacteria, whereas they do not contain antibodies, or contain them only in minute traces. But there is no doubt that some, possibly all, of the true antibodies may play the part of an opsonin, so that I am justified in including them here.

VARIOUS ANTIBODIES AND THEIR APPLICATIONS IN DIAGNOSIS.

The method of diagnosis of an infective disease by the demonstration of a specific antibody is theoretically simple. If the serum contains a large amount of an antibody to a pathogenic bacterium the presumption is that the person has, or has had recently, an infection with the organism in question. But in practice it is not always so simple. There are few examples of the application of the test which are so direct, so easy to carry out, and so certain in their results as the Widal reaction in typhoid fever, which, when properly performed, I regard as absolute. One of the causes of difficulty—for there are others—arises from the fact that it is not uncommon for normal and healthy persons to have in their blood small quantities of antibodies to various pathogenic bacteria. This is the case even with typhoid fever, for it is not uncommon for the serum of normal persons to clump the bacillus when but slightly diluted; hence—and this is a point on which I must lay much stress—all work of this sort must be strictly quantitative to be of value. We do not have to find the presence or absence of specific antibodies, but a significant amount, more than is present in health. This is especially the case in tubercle, in which disease, as I have already pointed out, opportunities for a process of accidental vaccination against the disease are frequently present. Keeping this in mind, let me give you a brief outline of the main antibodies to the tubercle bacillus and its toxin, and of their value in diagnosis.

1. *Antitoxin.*—I think we may regard it as proved that tuberculin—old tuberculin—is a solution of the real toxin of tuberculosis. But it is a toxin of a very remarkable kind, acting only on an anaphylactic person. The antitoxin to tuberculin—antituberculin—can be produced in animals by injecting large but carefully graduated doses of tuberculin. The serum of animals thus treated contains a new substance, the action of which is to neutralise the action of tuberculin on tuberculous subjects. Antituberculin can also be demonstrated in the blood of tuberculous patients who have been treated on the continental principle with large doses of tuberculin; serum from such patients mixed with tuberculin will prevent the latter from giving the von Pirquet's reaction on the skin of tuberculous patients. Non-treated patients may also contain antituberculin in small amount, and its demonstration affords a fairly good proof of a tuberculous infection. The proof of its presence is indirect, and I shall defer its consideration for the present.

2. *Precipitin.*—To demonstrate the presence of a precipitin to a bacterium it is necessary to obtain a solution of the bacterial protoplasm, and to mix it with the serum. If a precipitin is present the mixture becomes cloudy and a precipitate may form; thus, when an old, filtered culture of typhoid bacilli is added to serum from some typhoid patients (for the reaction does not always succeed) the phenomenon may occur, and when it does it constitutes a valid proof of a typhoid infection. Experiments on these lines with tubercle bacilli are difficult, since its protoplasm is very insoluble. T.R. approaches very nearly to such a solution; it consists of tubercle bacilli in a fine state of subdivision, closely akin to a true solution. It can be used for the test, and will occasionally be precipitated by tuberculous serum. Such tests are not very satisfactory, and yield no information that cannot be obtained by agglutination tests, which are much easier in execution.

3. *Agglutinin.*—This is the first antibody to the tubercle bacillus which was discovered and applied in diagnosis. The test is of some value, but stands on an entirely different footing from the Widal reaction. To begin with, it is not altogether easy to carry out. Special methods have to be employed for preparing the emulsion, since ordinary tubercle bacilli tend to clump spontaneously. Several methods are in use, but I have found it satisfactory to grind a large amount of tubercle bacilli (killed by heat, such as are used in the opsonic work) in normal saline solution saturated with chloroform, and then to centrifugalise at a moderate speed for an hour, or let it settle spontaneously for two days. The supernatant fluid forms a fairly stable emulsion, which may be standardised in the ordinary way. To carry out the test various admixtures are made of the serum and are incubated for four to six hours; the test is carried out in capillary pipettes and the results observed by the naked eye. Whatever method is used, the results are unsatisfactory in diagnosis but interesting theoretically. Thus Arloing and Courmont give the following table:—

	Positive. Per cent.	Negative. Per cent.
Tuberculous patients	87·9	12·1
Non-tuberculous	34·6	65·4
Apparently healthy	26·8	73·2

Here we see very clearly that a normal person may, and frequently does, contain in his blood antibodies to the tubercle bacillus. Their mode of origin becomes clear when we consider Descos's results with the serum of infants.

	Positive. Per cent.	Negative. Per cent.	Doubtful. Per cent.
Clinically tuberculous	72·3	12·3	15·2
,, non-tuberculous ...	12·7	87·2	—
Doubtful cases	50·0	44·4	5·5

Contrasting this with Arloing and Courmont's results we see that adult healthy and non-tuberculous cases have tuberculin agglutinins much more frequently than have infants. The practical value of a test of this sort is not great. Perhaps it might be increased if the estimation were carried out more carefully on quantitative lines. But it is quite certain that a case may progress from start to finish and never show the least trace of agglutinin in the blood. The test, therefore, cannot be an absolute one.

4. *Bacteriolysins.*—Of these we know practically nothing. Whether the tubercle bacillus is ever dissolved in the blood is as yet unknown, and the technical difficulties are so great that we can hardly expect valuable results from experiments *in vitro*. Possibly bacteriolysins do occur and play some part in the Bordet-Gengou reaction, with which I shall deal subsequently.

5. *Opsonins.*—The practical value of the opsonic index in diagnosis has been hotly discussed, and I do not propose to go over the ground at length to-day. I am the more justified in treating it in a brief and altogether inadequate way since Inman has recently published the results of a careful and painstaking investigation into its value, coming to conclusions with which, on the whole, I am in agreement. A low index (below 0·8) or a high one (above 1·2) is strongly suggestive of tubercle, and the greater the difference from these figures, whether by excess or deficiency, the more certain the diagnosis. This is generally admitted, but the value of the test is greatly reduced by the fact that, even in tuberculous cases, the index frequently falls within the normal limits. Inman, for example, found this to happen in

50 per cent. of cases of undoubted tubercle, and I think I should put the figure even higher. Thus, even if we were quite certain of our technique we could only diagnose 50 per cent. of cases of tubercle by the opsonic index—really fewer, since it is unsafe to make an absolute diagnosis from a slight variation above or below normal limits. To meet this difficulty methods have been devised of taking advantage of the fact that in an anaphylactic person a small dose of tuberculin causes a marked fluctuation of the opsonic index. The index is taken, and the patient is given a small dose of tuberculin or made to take exercise, or, if he has an accessible lesion, this is massaged; in any case, one or more subsequent determinations of the index are made and the results compared. As a rule, the first effect of the injection of tuberculin or of the procedures which are supposed to lead to an output of tuberculin from the lesions (auto-inoculation) is a lowering of the opsonic index—the negative phase—but occasionally this may be overlooked and the subsequent rise be the only indication of anaphylaxis. In a non-tuberculous person the index remains constant. This test is of great value, and it is the only one that professes to discriminate between an active lesion and the amount of antibodies, as shown by the "absorption-time," which started at 55 minutes, fell to 30 minutes, and then rose to 25 and ultimately to five minutes.

ESTIMATION OF TOTAL ANTIBODIES.

So much for the methods by which we attempt to investigate the various antibodies separately. I now turn to methods by which we are enabled to gauge the amount of all the antibodies in the serum without attempting to discriminate between the various sorts. Two such methods are in use. The first does not call for extended notice. It is the *meiostagmin* reaction, introduced by Ascoli, and employed by Izar in the investigation of tuberculous sera. It depends upon the fact that when a serum containing an antibody is incubated for two hours in contact with its antigen a marked lowering of surface-tension occurs. This is measured by the number of drops which a measured quantity of the mixture forms when falling from a narrow orifice under constant conditions. The number of drops is measured before and after the incubation; if there is no antibody in the fluid the number is the same in the two cases, whereas if antibody and antigen are present there is a lowering of surface tension

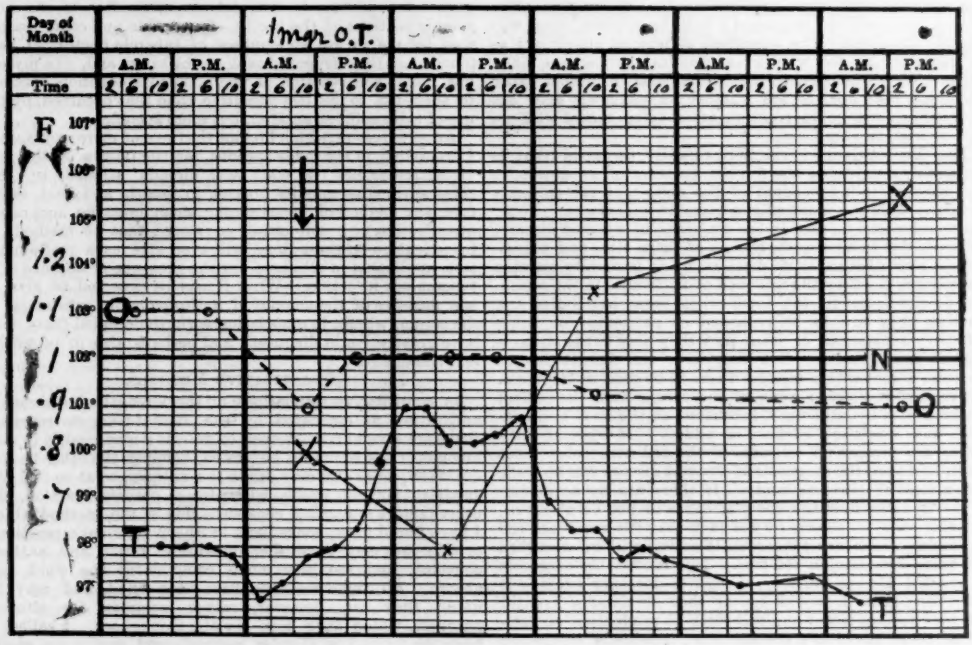

Chart showing: T, temperature; O, opsonic index; N, normal opsonic index; X, absorption time.

state of immunity or at least of altered susceptibility to tubercle that follows a complete cure. The criticisms I have to offer of this test are three: 1. The estimation of the opsonic index is tedious and difficult, and except when carried out with scrupulous care by a thoroughly trained experimenter fraught with liability to error. I am quite sure from what I have seen and heard that in many cases the results obtained are no better than guess-work. 2. In careful hands the error is believed to be about 10 per cent. If this were always in the same direction it would not matter, but if the error is sometimes in excess and sometimes in deficiency the total error may be serious. 3. The reaction does not always occur. I have met with at least two cases of undoubted tubercle in which no noticeable fluctuation of the opsonic index followed a dose of tuberculin, though the examinations were carried out with the greatest possible care. One of these cases is seen in the chart appended, which shows a very marked reaction after the injection of 1/1000 cubic centimetre of old tuberculin. It should be pointed out that the slight fall in the opsonic index occurred *before* the injection. The negative phase occurred, as is shown by the line between crosses, which indicates the total

which manifests itself in an increase in the number of drops. The method is a general one, and has apparently given good results in the hands of its discoverer in the diagnosis of malignant tumours. I cannot speak of its value in the case of tuberculosis from personal experience; I have commenced to experiment with the method, but have not yet acquired sufficient command of the technique (which appears to be difficult) to obtain results of value. I believe that Dr. Hort has invented a simpler and more accurate method of estimating slight changes in surface-tension, and has applied it successfully to the diagnosis of tubercle, syphilis, and cancer.

BORDET-GENGOU REACTION.

The other method, a much older one, is an application of the reaction of Bordet and Gengou, which requires a little explanation. I have already referred to the term complement but without defining it. Complement is a very fragile substance, allied in some ways to the enzymes, which is found in fresh serum, and which is supposed to play a part of great importance in protecting the body against disease. The antibody called bacteriolysin has in itself no action on

bacteria; but when these have been acted on by bacteriolysin (or, as it is usually termed, *sensitised*) they may be killed and even dissolved completely by the action of complement. Again, red blood corpuscles which have been sensitised by the antibody (hæmolytic amboceptor) which they produce when injected into a strange animal are also dissolved by complement. It is not yet quite certain whether the complement which dissolves bacteria is the same as that which dissolves red corpuscles, and it was in an attempt to settle this question that Bordet discovered the law which bears his name—a remarkable example of the practical advantages which may arise from what is apparently a useless research into a highly theoretical point. Bordet discovered that when antigen, antibody, and complement are present in a fluid, and a combination takes place between the two former, the complement present is abstracted. For example, if serum from an animal immunised to the typhoid bacillus or from a case of typhoid fever, and containing in either case typhoid antibodies, is mixed with an emulsion of typhoid bacilli or of an extract thereof (thus containing antigen), the two substances unite, and in doing so remove any variety of complement which may be present. This is readily demonstrated by adding red corpuscles which are saturated with hæmolytic amboceptor; if complement be absent, they will be unaltered; if it be present, they will become dissolved. The sensitised corpuscles simply act as an indicator to see whether a chemical action has taken place. We might compare them to a piece of litmus paper which has been used to see whether an unknown fluid has undergone a change in reaction after being mixed with an acid or with an alkali.

The Bordet-Gengou reaction supplies us with what is apparently a universal test for the presence of an antibody, and one that is independent of the nature of the antibody present. This is a point of considerable importance. Thus, the reaction can be used in the diagnosis of hydatid disease, a disease due to a parasite, though of large size, and accompanied, like other parasitic diseases, by an immunity reaction manifesting itself by the presence of antibodies in the serum. We do not know in the least what these antibodies are, whether they are to be regarded as antitoxins or other defensive substances, or what part they play in the struggle against the parasite. But they give the Bordet-Gengou reaction, a fact which enables them to be used in diagnosis. The method is simple: some of the serum from the patient is mixed with hydatid fluid, incubated at the body temperature, and sensitised corpuscles added. If hydatid antibodies are present no solution of the red corpuscles takes place, and then the diagnosis of hydatid disease can be made with almost absolute certainty. If there are no antibodies to the hydatid fluid the complement will not be absorbed, and this will be shown by the fact that the sensitised red corpuscles which are subsequently added will be dissolved and their hæmoglobin set free. This renders the diagnosis of hydatid disease unlikely, though it does not exclude it altogether, since it would appear that at times a hydatid cyst may remain latent and call forth no production of antibodies, those previously present being gradually eliminated from the blood. I have had but two examples of trying this test, in one of which it was positive and the other negative. I may say that in actual practice it is advisable to perform the test quantitatively, using various dilutions of the hydatid fluid, since normal blood may give some deviation with undiluted hydatid fluid.

APPLICATION OF BORDET-GENGOU REACTION TO TUBERCULOSIS.

It is clear that this method should be of great use in the diagnosis of tubercle, or at least in the study of the immunity reaction in that disease, since, although we know but little of the nature of the antibodies that are produced, a very large number of researches have been carried out on these lines. The results have been extraordinarily various, some authors finding the reaction of some value, others finding it quite useless. Thus Simon and Hans got a positive reaction in 18 and a partial reaction in 2 cases out of 24, whilst out of 19 non-tuberculous controls they obtained a reaction only twice. Others have been less fortunate; thus Laub and Novotny got 4 complete, 5 partial, and 4 traces of a reaction out of 30 cases investigated. Butler and Mefford found it in only about half of their cases, and Cohn only in 15 out of 57. The same divergencies of opinion occur amongst veterinary surgeons who have used the test, Weber and Dieterlen finding it invariably absent in healthy and invariably present in affected cattle, whilst Bach could find no difference between the two. I think the discrepancies are to be accounted for in several ways, the most important of which is the fact that nearly all observers have used tuberculin as an antigen; this is true of Armand-Delille, Frugoni, Bach, Weber and Dieterlen, Besançon and Serbonnes, Noguchi, Leber, Butler and Mefford, Babes and Basila, and others. In my own experiments I began with old tuberculin and found it unsatisfactory, then experimented with the same fluid precipitated with alcohol and the precipitate redissolved in normal saline solution, which was not much better. The comparative uselessness of tuberculin for the test has also been noticed by Noguchi, who found that broth itself, and non-specific substances such as glycogen, would give the reaction. This may explain some of the positive results obtained with non-tuberculous sera, and it appears to be that the fact that tuberculous sera do not always react is to be accounted for by supposing that the bacilli in a tuberculous lesion are not always giving off enough tuberculin to cause sufficient antituberculin to be demonstrable by this test. And in any case we should not expect the process to demonstrate antibodies to the non-soluble portions of the bacilli. It was this and other reasons that led me to use an emulsion of tubercle bacilli. I have found since that Frugoni has done the same, and, like myself, has found the reaction of complement-absorption obtained by their use to be less sensitive than that obtained by the use of tuberculin as antigen, but more specific.

Another reason, which I found the force of more and more as I proceeded in my investigations, for the failure of the previous researches is the fact, already alluded to, that these antibodies may be present in health, and that, therefore, any method of investigating them must be accurately quantitative. I am quite convinced that no method, on investigation on these lines, will ever give us a ready-made test, applicable in all cases, for the presence or absence of a tuberculous infection. What it may be expected to give us is a measure of the amount of antituberculous substances in the serum, which, in association with the clinical facts, may have great value in diagnosis, and perhaps also in prognosis and treatment.

QUANTITATIVE METHODS.

In quantitative estimations of the strength of a serum in antibodies, as estimated by the Bordet-Gengou reaction, there are several courses open to us. We may modify (1) the amount of the serum to be tested, keeping the other factors constant; or (2) we may dilute the antigen, so as to find the smallest amount which will give a positive reaction, the other factors remaining constant—this is the method which I have found most convenient in the Wassermann reaction; or (3) we may keep the amount of serum and antigen constant, and see how much complement the fluid can absorb. All these methods have been tried, and may be used; they are, however, rather complex for clinical purposes, which have been my aim throughout. I believe I have discovered a simpler method, and one more easily available for diagnosis. I found some time ago, and I believe that the observation was a new one, that in the case of the Wassermann reaction the absorption of complement takes place in a few minutes—five at most—at the incubator temperature. On trying similar experiments with sera in contact with emulsions of tubercle bacilli I found the time vary greatly, being on the average much shorter with tuberculous than with normal or non-tuberculous sera. This is what we might expect; the greater the amount of antibody the quicker we should suppose the reaction to be. I have therefore worked out what I term the *absorption-time* for a large number of sera, with results which I will show shortly.

I have always made use of the natural complement present in the serum, rather than attempt to keep this amount constant by heating the serum and then adding guinea-pig's serum, a method supposed, though I think not on very good grounds, to be more accurate. My chief reason for not doing so was that I was trying to work out a method of clinical value, and if I was able to do so by making use of the natural complement the results would be enormously more valuable from a practical point of view, because more easily obtained. I may say that I have made a considerable number of comparative experiments and do not find a serum

with a large amount of complement gives a long absorption-time, or *vice versa*. I cannot say whether such variations in the amount of complement as may occur in the same person's serum may affect the result, but have seen no reason to think so.

As regards the question whether I may not have been working with a non-specific process of absorption, I can only say that had this been the case I should have expected it to be proportionate to the amount of complement, which is not the case. Again, after an injection of tuberculin I have seen the absorption-time go down until it is longer than two hours; the absorption of complement, or its destruction at the incubator temperature, therefore, takes a period of time much longer than that given by ordinary serum. I feel fairly satisfied that the times which I measure are really to be regarded as an index of the amount of antibody present in the serum.

TECHNIQUE USED TO DETERMINE ABSORPTION TIME.

As regards the technical details of my method, the first requisite is a standard emulsion of tubercle bacilli. This I have found it convenient to make up to such a strength that it contains 4 per cent. by volume of solid bacillary substance, this giving an absorption-time with normal serum of convenient length. I had hoped that this would prove an absolute standard, a desideratum of great importance, so that different workers can obtain comparable results. I find, however, that when I use bacilli from different sources I get somewhat different results, so that I now standardise each batch as it is prepared, getting a strength such that the average absorption-time for a healthy person is about 20 minutes. The emulsion is prepared with normal saline solution and is carefully sterilised by intermittent sterilisation before it is standardised, and is kept in sealed ampoules. It keeps for about a month or six weeks, after which it alters gradually. The serum from the patient is collected in an ordinary Wright's pipette, and not more is required than can be collected from an ear or finger puncture. The test has usually been applied the same day, but I have been able to trace no alteration after 24 hours, beyond which it is not wise to go.

The only other necessary ingredient is the emulsion of sensitised red corpuscles employed to see whether the serum contains fresh complement or not. I have adopted human corpuscles in view of the fact that they are always at hand. These have to be sensitised by the addition in definite proportions of the heated serum of a rabbit which has been injected with well-washed human corpuscles. I have found it most convenient to mix the red corpuscles and the serum and allow them to stand in contact for a few minutes rather than to add the corpuscles and serum separately; this simplifies the process somewhat. I find that a mixture of 1 part of washed corpuscles and 4 parts of immune serum gives good results. The strength of this immune serum is of some importance. It must be sufficiently strong, otherwise the corpuscles will not be thoroughly sensitised, and will then require more than the proper amount of complement for their solution, which error manifests itself as a short absorption-time. Neither must it be too strong, though this is less serious; if too strong the corpuscles will be so strongly agglutinated that they will sink before the complement has time to dissolve them. In this case correct results can be obtained if the mixture is stirred once or twice. The heated serum from the immunised rabbit has to be tested, and when the suitable dilution is found the serum is diluted to that degree and distributed into sterile ampoules in which it will keep for some months, though gradually becoming weaker.

It is necessary that the test should be carried out in a water-bath, and for this purpose the incubator made for me by Messrs. Hearson for use in the Wassermann test is very useful, though not absolutely necessary. Some sort of a water-bath, however, must be used, since it takes an appreciable length of time for a tube of fluid to reach the required temperature when placed in the warm air of an ordinary incubator, whereas if the tubes are kept surrounded by water at the desired temperature (38° C.) and the fluid placed therein, the small amount used will reach the temperature desired almost at once. The technique is as follows:—

A mixture of 1 part of the serum to be tested is mixed with 4 parts of the emulsion of tubercle bacilli in a tube in a water-bath at 38° C. and the time accurately noted. In 2½ minutes four volumes of the mixture are removed from the tube with a capillary pipette, into which also a single unit of sensitised blood corpuscles is sucked, and the two expelled into a narrow tube already standing in the water-bath. The process is repeated after 5, 10, 15, and 20 minutes, and for a longer period if necessary. The corpuscles in the tubes are allowed to settle (it is an advantage to give them a preliminary stir), and when this has happened the presence or absence of hæmolysis is read off, and the absorption-time is taken as that of the first tube in which there is no trace of hæmolysis. Thus, with my own serum, the tubes which have been incubated for 2½, 5, and 10 minutes give more or less marked hæmolysis, 15 minutes a trace, and 20 minutes *nil*, so that my absorption-time is 20 minutes. A control is necessary in all cases, and is prepared by making a mixture of serum and normal saline solution in the same proportions as the serum and emulsion of bacilli in the test, and sensitised corpuscles are added to make sure that the complement is present in sufficient amount. It is an advantage to allow this control tube to stand for half an hour to see that the complement is not destroyed in this length of time, though I have never found this to be the case. As a general rule there is but little weakening after one hour. Commonly with tuberculous sera, but very rarely with non-tuberculous, the absorption-time is less than 2½ minutes. It is not admissible to attempt to measure this direct, and where a more accurate measure of the time is required a combination of two methods must be used. The emulsion of bacilli must now be diluted in known proportions, and tested in exactly the same way. The results can be expressed by dividing the absorption time by the dilution. For example, a specimen of serum from a patient with tuberculosis of the breast gave an absorption time of 10 minutes with a 1 in 10 dilution of the emulsion; the time therefore was 10/10, or 1 minute. In a case of phthisis the time was 10 minutes with a dilution of 1 in 500, so that the absorption time was expressed as 1½ seconds. I need not say that all times under 2½ minutes are to be regarded as arbitrary, and I have not usually worked below this period. I am rather sorry that I have not done so, since it makes the results much more exact.

RESULTS OF ABSORPTION-TIME TESTS.

Let me now quote my results. I have examined 34 cases of diseases other than tubercle and healthy persons. The average absorption time was 18·1 minutes, the maximum 35 minutes, and the minimum 2½; this shortened time was present in but three cases which were not thought to be tuberculous. In one of these cases I have some doubts; the person has suffered off and on from various ill-defined illnesses for several years, and although showing no definite sign of illness is not robust. Another serum came from a child with typhoid fever, and no details as to the presence or absence of tubercle were obtainable. The third came from a nurse who is said to have suffered from goitre, but who was otherwise healthy.

In tuberculous cases the most usual thing is to find the absorption time greatly reduced. In my cases the average time was 7·4 minutes, and times of less than 2½ minutes were found in 25 out of 56 sera examined, or 44·6 per cent. Thus, if we regard an absorption period of 2½ minutes as affording the criterion for the presence or absence of the test, we find it in 44·6 per cent. of tuberculous and 8·8 per cent. of non-tuberculous cases. If we take 5 minutes we find it in 66 and 11·7 per cent. respectively. The following table gives my results to the present time. In calculating the absorption time for the tuberculous sera I have taken all times under 2 minutes as if they were 2½ minutes exactly; this has the effect of lengthening the average very considerably:—

Absorption time.	Tuberculous cases.	Non-tuberculous cases.
Less than 2½ minutes	25	3
2½–5 minutes	12	1
5–10 ,,	9	2
10–15 ,,	3	7
15–20 ,,	2	11
20–25 ,,	1	7
25–30 ,,	2	3
Over 30 ,,	2*	0

* One case 40 minutes; the other case 55 minutes.

Average of tuberculous cases ... ... 7·4 minutes.
Average of non-tuberculous cases ... ... 18·1 ,,

Percentage of Cases.

Absorption time.	Tuberculous.	Non-tuberculous.
Under 2½ minutes	44·6	8·3
Under 5 ,, ...	66·0	11·7
Under 10 ,, ...	82·1	17·6

I quote the following results separately (they are, however, also inserted into the preceding table), as they were obtained by Dr. P. B. Ridge by my method, but quite independently, and may be taken to show that results similar to mine can be obtained by others.

Non-tuberculous cases.	Absorption time.
1. Normal case	15 minutes.
2. Typhoid fever	15 ,,
3. Anæmia	30 ,,
4. Gastric ulcer	20 ,,

Average 20 minutes.

Tuberculous cases.	Absorption time.
1. Phthisis, doing well	1 minute (calculated).
2. ,, doing fairly well	2½ minutes.
3. ,, early, doing well	2½ ,,
4. ,, chronic	10 ,,
5. ,, no details	10 ,,
6. ,, doing well	2½ ,,
7. Tuberculous iridocyclitis	15 ,,

Average 6·2 minutes.

The correspondence between the two sets of averages is very close. I think, therefore, that we may regard an absorption time shortened to 2½ minutes as affording strong presumptive evidence of tubercle—not absolute proof, for, as you will see, it may occur, though rarely, in persons in whom there is no definite evidence of the presence of tuberculosis.

APPLICATIONS OF TEST IN DIAGNOSIS AND PROGNOSIS.

Further, tuberculous cases do not always give a shortened absorption period. When I first realised this it occurred to me that a shortened time, which I take to indicate the presence of abundant antibodies (usually regarded as protective substances), might also indicate a powerful immunising response, and therefore a good prognosis. To a certain extent this is true: very short absorption times are usually met with in chronic cases which are doing well, and in quite general terms are, in definite tuberculosis, longer in cases which are progressing rapidly. The process, therefore, has some value in giving a clue to the prognosis. But it is very far from being absolute. This is shown in an extremely interesting way by the case that gave the longest absorption time in my whole series—55 minutes. This was from a mild case of primary tuberculosis of the larynx, which gave a very strong von Pirquet's reaction, and reacted to tuberculin internally. This patient was certainly not affected severely, yet his blood gave practically no signs of the presence of antibodies. He was treated with rather large doses of tuberculin (1/2000 c.c. O.T.), to which he reacted strongly, and after three such injections he showed no indications of becoming immunised to the substance. There was a well-marked negative phase after each injection, and in two of these I believe I was able to demonstrate the fact that this negative phase, characterised by a very long absorption time, was not due, or at least not entirely due, to a diminution in the amount of antibodies in the blood; it appears to be due in part at least to the presence of a substance which inhibits the linking up of antigen, amboceptor, and complement. This was shown by preparing mixtures of the patient's serum with serum containing a large amount of tuberculous antibodies; in all cases the absorption time of the latter was greatly prolonged as a result of the addition of the serum from the patient in whom there was a negative phase. These results were not due to the differences in the amount of complement present in the various mixtures, for in some cases mixtures containing a large amount of complement gave a short absorption time, and *vice versâ*. Not many of these experiments could be tried, as the phenomenon was only met with in one patient, and I should not have been altogether satisfied with the proof that the greatly prolonged absorption time in the negative phase (amounting on one occasion to more than two hours) was actually due to the presence of an inhibiting substance if I had not subsequently seen that Calmette and Massol have recently described a similar substance as occurring in the blood of animals during the course of immunisation against tuberculosis—i.e., under conditions similar to my own. According to them it interferes with the combination of antigen and antibody if added before the complement, and may occur in the same specimen of serum as the ordinary antibodies and mask their action. Taken together with Calmette and Massol's results my observations appear to show that such a substance may occur in human serum and its presence may explain the negative phase, a phenomenon for which no clear explanation has yet been given. It seems to me more likely that a small quantity of a new substance should make its appearance immediately after the injection of tuberculin or other antigen, rather than that there should be any appreciable diminution in the total amount of antibodies where these are abundant.

Thus it appears that a prolonged absorption time may be due (1) to the presence of antibodies in minute amounts only (this occurs in health or in tuberculosis, and as a rough general rule indicates a progressive disease); and (2) to the presence of this inhibiting substance (this does not necessarily indicate a bad prognosis). Judging from the few cases in which I have been able to put the matter to the test, a prolonged absorption time in a case of undoubted tubercle indicates a high degree of susceptibility to tuberculin, whether applied to the skin or injected; but a patient with a shortened time will also react.

I must add that I have been able to trace no apparent connexion between the amount of antibodies in the blood (as tested by the absorption time, the opsonic index, and the amount of complement).[1] This is shown in the following table:—

	Absorption time. Minutes.	Opsonic index.	Complement value.
Control (normal)	15	1·0	74
Doubtful tubercle (Case A) ...	30	1·3	76
Mild tubercle of larynx	55	1·0	94
Phthisis	2½	1·2	66
Tuberculous glands in neck ...	2½	0·84	Not tested
Doubtful tubercle (Case B) ...	10	0·81	Not tested
Phthisis (another case)	2½	0·9	134
Lupus	7½	Not tested	42

Other examples might be quoted.

In conclusion, may I urge the desirability of the acquisition of fuller knowledge than we now possess of the presence of antibodies in tubercle, and of their amount, as determined by any accurate quantitative method? I believe that if we were able to acquire a mass of information on this subject such as we have on the opsonic index we might gain very much useful information as to the pathology of tubercle, and perhaps much help as to treatment. On theoretical grounds it appears highly probable that an excess of antibodies in the blood, though probably not a cause of immunity to the disease, or at least not the only cause, should indicate a good prognosis, and is a thing to be striven for, whatever method of treatment we may adopt. In one or two cases under treatment I have seen a very marked improvement coincide with a great shortening of the absorption time. Thus, one patient with tuberculous glands in the neck had an absorption time of 30 minutes (tested on several occasions). After a course of tuberculin treatment his time was found to have shortened to two and a half minutes, and a marked diminution in the size of the glands had occurred. I have had but little opportunity for this class of investigation or for researches into the question of the occurrence of a negative phase after auto-inoculation, and should welcome cordially any further information on the subject, whether obtained by my own method or by any other.

[1] The method which I have evolved for the estimation of the relative amount of complement in different sera is as follows. Human red corpuscles are washed by three centrifugalisations from normal saline solution. They are then placed in a long narrow centrifugalising tube divided into hundredths and diluted with saline, and again centrifugalised until the volume of the deposit of corpuscles is constant. The supernatant fluid is pipetted off, and to each volume of corpuscles four volumes of a strong immune serum (rabbit) are added. These are incubated together for ten minutes or more and well mixed. Then four units of this sensitised emulsion are placed in a small tube (which must be clean and dry) and one volume of the serum to be tested is added, and the mixture incubated. Action is allowed to go on for a quarter of an hour, with occasional stirring, and the tube then centrifugalised very thoroughly. Then an amount which just fills five of the graduations in a Sahli's hæmoglobinometer are removed with a capillary pipette previously prepared for the purpose, placed in the comparison tube of the apparatus, and the amount of hæmoglobin estimated in the ordinary way. The figure thus obtained is regarded as the index of the amount of complement present. As a rule it lies between 25 and 150, the usual figure being 60–70. The method is quick and easy, and I believe it to be accurate.

ABSTRACT OF

The Lettsomian Lectures

ON

OPERATIONS FOR STONE IN THE MALE BLADDER.

Delivered before the Medical Society of London on Feb. 6th and 20th and March 6th, 1911,

BY WILLIAM F. HASLAM, M.B. BIRM., F.R.C.S. ENG.,

SURGEON TO THE BIRMINGHAM GENERAL HOSPITAL.

LECTURE II.[1]

Delivered on Feb. 20th.

Mr. Haslam said that Joannes Jacobus Raw, who became the most famous lithotomist in his day, was born in 1668. For some years he travelled about Germany, Norway, Holland, and Spain. After a time he went to Leyden and commenced the study of medicine in the medical school. Then he visited Paris and studied anatomy and surgery under the best masters. At Amsterdam he taught anatomy and practised surgery. It was at this time that Frère Jaques appeared in the city and performed his new operation, which Raw saw and strongly condemned. Soon after this he was appointed lithotomist to the city of Leyden, where he made a great sensation. He died in 1719. When he first began to cut for stone he performed the Marian operation. When, however, Frère Jaques appeared in Holland, Raw was allowed to examine the bodies of those who died after being operated on by him, and from Jaques he learnt the operation he was then performing. After a time Jaques appeared again and performed his second and improved operation, and this operation Raw learned and adopted with great success. At the death of Jaques it was believed that Raw was the only surgeon in Europe who knew his true method. That was generally believed to be the cutting into the bladder behind the prostate, which was, however, his first and imperfect operation. Raw, from motives of his own, was mean enough to delude the profession into the idea that he continued to make that incision, while all the time he was incising the prostate according to the method adopted by Jaques in his improved operation. Nothing would induce him to impart to his greatest friends or pupils the way in which he made his deep incision. Cheselden worked out and successfully practised an operation which became associated with his name; and he freely imparted a knowledge of its principles and details to all anxious to learn. The report of his operation rapidly spread, and Morand, then the most celebrated surgeon in France, came over to England and saw the operation performed in St. Thomas's Hospital by Cheselden and learnt its details. Frère Jaques, in his first operation, aimed boldly at the body of the bladder with his dagger-shaped knife, leaving the prostate untouched and, though successful in extracting the stone, his patients died in large numbers. He demonstrated, however, that a wound of the bladder in this situation was not necessarily fatal. In his second and improved operation he gave up the use of his dagger-shaped knife and dissected carefully on to a grooved staff and made the deeper incision by cutting the prostate and neck of the bladder upon the groove of the staff. A feature of both these operations was that the incision was not limited to the perineum, but passed backwards into the ischio-rectal fossa, thus greatly facilitating the extraction of the stone. Then Raw followed in detail the two operations of Jaques, but refused to divulge the mode of performance of the second, and at his death, which occurred in 1719, the knowledge of this was lost. Cheselden, following the description of Raw's operation, failed, as he was only likely to do, to attain his success, and finally systematised the lateral operation. This he performed by a lateral incision between the accelerator urinæ and the erector penis, passing backwards into the ischio-rectal fossa and dividing the transversus perinei; the knife was then introduced into the membranous urethra, and, passing along the groove in the staff, divided the prostate. This was the operation he taught Morand, and, though then quite satisfied with it, he had the misfortune later on to wound the rectum in two cases and to experience a difficulty in extracting a large stone. In 1731, therefore, the year after Morand had returned to Paris with full details of the operation, he altered the mode of the deep incisions. Before long a period arrived when the straightforward operation of Cheselden, which required a knowledge of anatomy and a careful dissection, was replaced by one that was performed largely by the aid of mechanical contrivances, such as grooved lithotomes, concealed knives, and cutting directors.

We find that Le Cat, Frère Côme, Foubert, and Hawkins were pioneers in this direction, and that the simpler operations were suspended for a time to make way for others done with the assistance of these inventions. Surgeons had long been familiar with the gorget; it was, indeed, the lineal descendant of the conductor of Hildamus, and acted as a dilator and a conductor. An English surgeon, Sir Cæsar Hawkins, conceived the idea of converting its right edge into a cutting edge, so that it might be pushed along the groove in the staff and thus divide the prostate more easily and, it was thought, with less danger than by using the knife in Cheselden's operation; and for a time this instrument was generally used. The operation as originally formulated by Cheselden, that which he taught Morand, does not seem to have found entire favour with surgeons at that time, probably from the fact that though safe and easy when performed by one thoroughly acquainted with the anatomy of the parts and the details of the operation, it was by no means free from difficulties and dangers when undertaken by those less competent. The dangers were principally incident to the deep incision through the prostate and the introduction of the forceps. These dangers were likely to deter the timid and to try the nerve of any one who, without due consideration, had embarked on this operation. Consequently, gorgets almost without number were invented, each with some special feature which was supposed to render it a safe instrument with which to enter the bladder. If failure occurred after using one of these it could be attributed to the instrument and not to the operator. With the disappearance of the gorget a return was made to the simpler method as introduced by Cheselden, and the lateral operation in its original form held the field. As such it was known to those who commenced professional studies before about the year 1885, when as yet it had not felt the full effect of the revival, under improved conditions, of the suprapubic operation and of the great advance made in the crushing operation by Bigelow. From that time its decline was rapid. The first recorded case of the suprapubic, or high, operation is that by Pierre Franco of Lausanne in 1556. No more was heard of the method until 1581, when Dr. F. Rosset of Montpellier thought that a stone in the bladder might be removed by opening that organ above the pubes, using a grooved catheter as a guide on which to cut. In 1719 John Douglas, F.R.S., surgeon to the Westminster Hospital, performed the high operation in this country, and in 1723 published the details of four cases occurring in boys under 16, all of which were successful. Cheselden also, in the early part of his career, in 1723, published a treatise illustrating his method, which was similar to that employed by Douglas. A very considerable controversy arose as to whether Douglas or Cheselden, who both wrote on the subject in 1723, should be considered as having established the high operation as a mode of practice. Deschamps considered that the credit was due to Douglas. In 1820 Sir Everard Home of St. George's Hospital performed his modification of the high operation. He passed a catheter with an open end and containing a stilette along the urethra, and having exposed the bladder by a suprapubic incision, pushed the stilette through the bladder and enlarged the opening with a bistoury. In spite of these and other attempts to improve the operation it did not commend itself to surgeons as a routine method of treatment, and it was left for such cases as were considered unsuitable for the lateral operation. In 1880 Dr. Pietersen of Kiel, who was present at the reading of a paper by Garson on the high operation at the Congress of German Surgeons, published an account of experiments made to ascertain the relative position of the anterior fold of the peritoneum and of the upper border of the pubes. As the result of these papers the high operation was again taken up and gradually came into favour. It was now, with hardly any exception, the only cutting operation resorted to. The choice of method might lie between cutting and crushing, but if the former was decided on the suprapubic operation was performed as a matter of course.

[1] Abstract of Lecture I. was published in THE LANCET of Feb. 18th, 1911, p. 423.

THE TREATMENT OF PNEUMONIA.[1]

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WHEN your secretary, Dr. Vining, requested me to read before the Ealing branch of the British Medical Association a paper on the treatment of pneumonia I was glad of the opportunity once more to take up the consideration of this most important subject. It has interested me for many years. In 1885 I published a description of two cases of broncho-pneumonia treated with bleeding and ice,[2] and I devoted a large part of my Harveian Lectures delivered in 1903 to a study of the proper treatment of this common and fatal disease. So long as one patient out of every five or six attacked by pneumonia dies, and the total mortality reaches 40,000 deaths every year in the United Kingdom, the necessity for further consideration of the question of its treatment is only too obvious. What I wish to do now is to draw attention to some important matters connected with pneumonia and its treatment which seem to me not sufficiently regarded by the medical profession generally, and a due regard to which is in my opinion essential if a greater measure of success in treatment is to be attained.

I. The first point on which I would lay stress is *the importance of the earliest possible discovery of the local lesion*. Pneumonia consists, in the great majority of cases, in a local infection of the lung by pneumococci from the oral or nasal passages. It is of essential importance to determine precisely the situation of this primary focus in the lung and to attack it immediately by every means in our power; for, if left alone, the invading organisms increase at an overwhelming rate and may invade the whole lung. Every hour that passes diminishes the chances of successful treatment. In pneumonia, as in pulmonary tuberculosis, we shall not make much real advance in treatment until every medical practitioner has realised the duty incumbent on him of detecting the disease in its earliest localisation in the pulmonary tissue.

Principiis obsta: sero medicina paratur
Quum mala per longas convaluere moras.

For the accomplishment of this imperative duty it is necessary that we should all learn how much more important than auscultation is the constant practice of a careful and methodical percussion. We may learn much from the stethoscope, but in these early microbic infections of the lungs we may learn much more by the skilled use of our own fingers. For the earliest indication of a localised pulmonary invasion by the pneumococcus or by the tubercle bacillus is a local dullness to percussion, and the diminution at that same place of the functional activity of the lung. Dullness and diminished air-entry are the first evidences both in pneumonia and in pulmonary tuberculosis, but while the situation of these signs in tuberculosis is usually multiple and at certain definite situations in the upper parts of the lungs, in the pneumonia of adults a single area is generally first to be detected, and in the lower part of the lung; though apical pneumonia occurs occasionally and in children the infection is usually multiple.

We read in some descriptions of the disease that in some cases no physical signs are detectable until after the lapse of several days. I doubt whether this statement is ever true: I am sure that in most instances at all events it is founded simply upon a careless method of examination. Usually within 24 hours after the initial rigor of a pneumonia it is possible to demonstrate the existence of definite physical signs. They are at first merely dullness and lessened air-entry. But in pneumonia the picture rapidly changes, the dullness extends at an alarming rate, sharp inspiratory crepitation becomes audible, followed by bronchial breathing and bronchophony. At this stage the most careless physical examination may succeed in recognising a consolidation of lung.

The detection of the disease in its earliest stage is not merely a matter of scientific medical interest, it is of vital importance to the patient. Remember that while you are "fiddling, Rome is burning"! If your bedroom curtains caught fire, would you adopt an "expectant treatment" until the whole house was in a blaze? By an expectant treatment in pneumonia thousands of lives are lost every year.

II. *How is the initial lesion of pneumonia to be attacked?*—I answer unhesitatingly, *by the application of two icebags*, so placed as to include between them the inflamed area of lung. The pneumococcus is an organism which is very sensitive to changes in its environment, and in particular to changes of temperature. Dr. Eyre tells us[3] that "the range of temperature enjoyed by the pneumococcus is limited to about 14°, and is bounded by 28° C. on the one hand, below which no growth takes place, and by 42° C. on the other. The optimum temperature is undoubtedly 37·5° C." It is, therefore, not unlikely that persistent local reduction of temperature of a pneumonic lung, even though of moderate amount, may exercise a definite inhibitory influence on the rate of multiplication of the developing pneumococci. Fortunately, this is specially likely to be true in the worst cases of the disease, for Dr. Washbourn[4] showed from his experiments that *the greater the virulence the pneumococcus is found to possess, the more marked is its susceptibility to surrounding influences*, and the more difficult it is to cultivate. Less virulent "strains" of this organism were able to grow at lower temperatures. He found that a pneumococcus which was slightly virulent, and which would grow on artificial media at a temperature as low as 20° C., could by passages through animals be converted into a highly virulent type, which would not grow on artificial media at temperatures below 37° C.

It seemed to be very desirable, therefore, to ascertain by precise bacteriological investigation the comparative rate of growth of a given "strain" of pneumococcus at temperatures differing from each other as little as about 5° C. At my request Mr. S. Neave, M.R.C.P. Lond., at that time bacteriologist to the Hospital for Sick Children, kindly undertook this investigation in 1903, and in my Harveian lectures[5] I quoted his report. It was to this effect:—

> A colony isolated from [pneumonic] sputum was injected into mice, and the peritoneal and subcutaneous fluids resulting proved to be of exceptionally vigorous growth. In the first plating the peritoneal fluid was diluted by sterile saline solution, and an equal measured quantity was spread by a sterile glass rod on two agar plates. One was incubated at 39·4° C., the other at 32° C., resulting in 285 colonies at the higher temperature and 15 colonies at the lower. ..... In the second comparison one plate was incubated at 37·5° C., and produced 1568 colonies, while the second at 27·5° C. produced 690 colonies. In the third 38·5° C. produced 153 colonies, and 32° C. produced 42 colonies.

Mr. Neave's conclusion was:

> The above, although consisting only of one set of experiments, conclusively proves in respect of that particular strain of the organism that *a temperature of a few degrees less than that of the body prevents so active a growth.*

And he adds:

> It may be that the comparatively more vigorous growth at the lower temperature in the later experiments was due to the organism having been brought up on artificial media, and so had become less virulent. It may be noted that Dr. Washbourn points out that the non-virulent varieties have a stronger growth at lower temperatures than those of a virulent character.

These observations by Mr. Neave were made in 1903. Quite recently my friend Dr. Spilsbury, the well-known pathologist and bacteriologist of St. Mary's Hospital, has been good enough to examine the question a second time by careful investigations of his own. I quote his report in full.

"*Experiments on the cultivation of Fraenkel's pneumococcus at varying temperatures.*—The method employed was to take equal volumes of a pneumococcus emulsion in normal saline, and transfer to tubes of liquefied agar which were then poured into Petri dishes and solidified. In each experiment one set of these plate cultures was incubated at a given low temperature and a control series of plates was incubated at 37·4° C. (blood heat). At the end of a given time the number of colonies which had developed in each series of plates was counted. The plates which had been incubated at a low temperature were then kept at blood heat for a further period of two days, to ascertain whether the organisms which had failed to develop into colonies were dead or

[1] An address delivered (by request) before the Ealing branch of the British Medical Association on Dec 14th, 1910.
[2] Brit. Med. Jour., July 11th, 1885.
[3] Practitioner, 1900, p. 285.
[4] Croonian Lectures, THE LANCET, Nov. 15th (p. 1301), 22nd (p. 1378), and 29th (p.1438), and Dec. 6th (p. 1528), 1902.
[5] The Treatment of Some Acute Visceral Inflammations, and other papers. John Murray, 1904.

only lying dormant. The result shows a difference in this respect between Culture A, which was an old laboratory stock which had been grown on artificial media for a considerable time and which was therefore hardier and more likely to survive abnormal conditions, and Culture B, which was obtained from the lung at a necropsy in a case of lobar pneumonia, the emulsion used being prepared from the first set of cultures grown upon serum.

Experiment 1.—Culture A was incubated for three days at 32·5°–34° C. *84 colonies* were then counted. After a further two days' incubation at 37·4° C. *104 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *112 colonies*.

Experiment 2.—Culture A was incubated for three days at 29·5°–31·5° C. *45 colonies* were then counted. After a further incubation for two days at 37·4° C. *167 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *191 colonies*.

Experiment 3.—Culture B was incubated for three days at 29·5°–31·5° C. *19 colonies* were then counted. After a further incubation for two days at 37·4° C. *25 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *116 colonies*.

These experiments indicate that a lowering of the temperature of incubation of the pneumococcus of 3½ to 8° C. *not only retards the growth* of the organism, the retardation being greater the more the temperature is lowered, but *also destroys the vitality of some of the organisms so that they are rendered incapable of growing* when subsequently placed under more favourable temperature conditions. This effect is, as might be expected, more marked in the case of organisms recently obtained from body lesions and less inured to growth under artificial conditions."

Both Mr. Neave and Dr. Spilsbury point out that while the inhibitory effect of a lowered temperature is unmistakeable in all their experiments, it is most striking in the case of pneumococcal cultivations which have been grown as little as possible on artificial media. Mr. Neave's first observation, therefore, and Dr. Spilsbury's Culture B give the clearest indication of what is likely to happen when the temperature of a pneumonic lung is reduced by the application of icebags, and it is precisely in these two instances that the inhibitory effect is most marked, the diminution in Mr. Neave's case being from 285 to 15, or a reduction of 94·7 per cent., and in Dr. Spilsbury's from 116 to 19, or a reduction of 84 per cent.

Dr. Spilsbury adds the extremely valuable proof that the inhibition of growth was not merely temporary, but that it was an actual destruction of vitality of many of the organisms.

If we put these results together in tabular form we have as follows:—

Neave.		Spilsbury.	
		(A)	
39·4° C.	285	37·4° C.	112
32° C.	15 (=5·3%)	32·5° C.–34° C. After 2 days at 37·4°.	84 104
		(A)	
37·5° C.	1568	37·4° C.	191
27·5° C.	690	29·5°–31·5° C. After 2 days at 37·4°.	45 167
		(B)	
38·5° C.	153	37·4° C.	116
32° C.	42	29·5°–31·5° C. After 2 days at 37·4.	19 (=16%) 25

Surely no further proof is needed. The bacteriological evidence of the inhibitory and even destructive effect of local cold on a pneumococcal focus is undeniable, and we are thereby prepared to accept the clinical evidence of the value of the icebag in the treatment of the early stage of a pneumonia. But before stating the results of careful clinical observation on this subject, it is desirable first to mention the precautions necessary for the successful employment of this method.

The employment of icebags in the treatment of pneumonia calls for two precautions. In the first place, the size of the right auricle must be carefully ascertained by light percussion in the fourth right intercostal space. One fingerbreadth of dullness is present in this situation in every normal heart; this is an elementary fact which has not yet found its way into the text-books, yet which can be verified by anyone. In an early stage of a pneumonia an increased extent of this dullness soon becomes perceptible. If it amounts to more than a fingerbreadth and a half, and if some dullness can be detected also in the third right space close to the sternum, it is generally wise to relieve the right heart by the employment of leeches (three or four for an adult, one or two for a child) before the icebags are applied. The neglect of this precaution may imperil the success of the treatment.

The second precaution necessary is to keep the legs and feet of the patient thoroughly warm by the employment of hot-water bottles and warm woollen stockings. A third precaution is useful, especially in the case of children; it is a frequent use of the clinical thermometer by a careful nurse.

If these precautions are adopted the treatment by icebags may be practised without fear. In the earliest stage it will sometimes abort the disease. When the pneumonia has advanced so far that this is no longer possible, it will yet limit the spread of the inflammation, diminish the local pulmonary engorgement, and repress the active increase of the pneumococci. Careful examination of a pneumonic pulmonary area before and after the use of icebags shows that the dullness is less absolute, and often also less extensive, and that the air entry is considerably greater.

Clinical evidence thus confirms the bacteriological results above stated, and is confirmed by them. The two together combine into a scientific proof of the value of ice in pneumonia, as when astronomical telescopic investigation of a region of the heavens determined by careful mathematical reasoning demonstrates the existence of a new planet. If this simile excites a smile, as a comparison of small things with great, it is sufficient to reply that it is a comparison of a fact on the recognition of which the life of a man (and often the happiness of many) may depend, with facts which, however interesting, are of no immediate practical importance.

Is it too much to hope that before the next generation of practitioners pass away all medical men will be so carefully educated in the practice of percussion that they will be able to demonstrate for themselves the beneficial effect of icebags on an incipient or early pneumonia? Medicine is both a science and an art; both must be cultivated with equal care and accuracy. For the art to ignore the science is stupid: for the science to neglect the art is suicidal. The art of medicine is often in advance of the science, as in the employment of quinine, arsenic, or mercury. Yet the practical success of the art must really be based on scientific facts, and it is our business to discover these facts as soon as we can. On the other hand, the medical science which has any real claim to the name cannot be confined to the laboratory; it must be constantly in touch with an ever-increasing accuracy of clinical observation. We hear much complaint nowadays of the bacteriological ignorance of the clinician, but how about the clinical ignorance of the bacteriologist?

III. The beneficial influence of ice applied over an incipient or early pneumonia being thus demonstrated by clinical observation and confirmed by bacteriological experiment, we may next inquire whether any additional treatment is of value in the attack on the invading pneumococci. The icebag is a weapon from without. Have we any medicaments which will penetrate into the innermost recesses of the lungs, and directly by an antimicrobic action or indirectly by an influence on the tissues attack the microbes from within? Traditional therapeutic scepticism does not see how this is possible. The possibility of benefit from volatile antiseptic drugs given by inhalation has been equally the subject of therapeutic scepticism in pulmonary tuberculosis. Yet the experience of the last five years has fully demonstrated to me the extraordinary value of such inhalation, provided that it is continuous and persistent, in early pulmonary tuberculosis. Under its use the temperature falls, cough is rapidly relieved, sputum diminished and more easily effected, the body-weight quickly increases, physical signs gradually and progressively improve, and tubercle bacilli become less numerous and finally disappear. For the evidence for these statements I must refer to the clinical details of 30 cases published in 1909,[6] and of 20 additional cases published in the following year.[7]

If, then, it is now certain that continuous inhalation of

[6] Brit. Med. Jour., Dec. 11th, 1909.
[7] THE LANCET, Nov. 19th, 1910.

volatile antiseptics does in some way repress the local development of the tubercle bacilli in the alveoli of the lung, may it not be possible that the same method may be useful also in the shorter and fiercer struggle with the pneumococcus? The time at our disposal is but short, yet even a slight assistance may possibly turn the scale. It might perhaps be thought that the severe dyspnœa of pneumonia would make it difficult or even impossible for a patient to wear a Yeo's inhaler. At the earliest stage of the disease, of which I am now speaking, this causes no difficulty, and at a later stage the acute dyspnœa which might prevent the use of an inhaler can generally be relieved by the employment of leeches.

As an example of its use in a very severe case, I may mention that of a man referred to in my valedictory lecture at St. Mary's three years ago, who was acutely ill on his admission, with clinical evidence of a generalised pneumococcal infection causing pneumonia, double pleurisy, and pericarditis. All the cases with this combination of physical signs caused by a pneumococcal infection that I had previously seen had been fatal. This patient was treated with five icebags, two over each lung and one over the heart, and he wore a Yeo's inhaler, which was refreshed every hour with six to eight drops of the same antiseptic solution which has proved so useful in tuberculosis. Being anxious to give him every possible chance I requested my distinguished colleague, Sir Almroth Wright, F.R.S., to examine his blood and to see whether a "vaccine" could be prepared. Sir Almroth Wright very kindly himself investigated the blood, but it was found to be sterile. Hence, no assistance from this side was available. The patient was admirably nursed, and under the free use of ice, the employment of hypodermic strychnine, and the constant inhalation of antiseptics he made a good recovery.

This was the first case of the kind in my experience in which this happy result was obtained, and I believe that the continuous antiseptic inhalation had certainly some share in bringing it about.

IV. A combined attack on the commencing pneumococcal infection having been thus organized by the use of ice externally and of antiseptic vapours inhaled into the lung, it remains to inquire whether we can simultaneously institute a third line of attack by means of a "vaccine therapy" which shall call into more active exercise the immunising reactions of the tissues, and by a modification of the blood serum succeed in rendering the invading organisms more susceptible to phagocytosis. It must be confessed that until recently there has not seemed to be much ground for hope from this procedure, although theoretically a localised infection like an initial pneumonia would seem to be a condition which ought to be benefited thereby. Perhaps the failures hitherto may be largely due to the late stage of the disease reached before the "vaccine" has been employed.

No form of treatment ought to be judged by its failure to cure a morbid condition already of great intensity. It is quite probable that a measure which can be of essential service in the early period of an infection may be powerless when the infection is far advanced. Hence it seems clear that if "vaccine therapy" is to establish its claim to usefulness in pneumonia it ought to be employed at the earliest possible moment after the discovery of the local lesion. But I think it is also clear that it ought not to be advocated to the neglect of the other measures of which I have spoken, the usefulness of which is already demonstrated. Therapeutic methods ought not to be jealous of each other. Let them combine their forces for the cure of the patient; and let the physician welcome help from every possible source.

The advantage of a combination of these different therapeutic efforts is clearly seen in the interesting cases, 24 in number, related in the admirable paper by Dr. W. H. Willcox and Dr. W. Parry Morgan read at the Belfast meeting of the British Medical Association in July, 1909.[8] These cases appear to afford very strong evidence of the value of a vaccine treatment in pneumonia, especially when an autogenous vaccine is employed. But the authors lay stress on the fact that they did not allow the use of inoculation to make them neglect other methods of treatment, and that "where necessary leeches, sponging, icebags, cardiac tonics, oxygen, &c." were also employed. It seems not improbable that their success with the "vaccine therapy" may have been due in part to the fact that they did not rely exclusively upon it, but used other means in addition, and more especially the powerful influence of ice. It is likely enough that a combination of therapeutic methods may succeed in accomplishing a result which could not have been attained by the employment of one method alone.

The evidence of the value of a vaccine therapy in pneumonia, published by Dr. Willcox and Dr. Parry Morgan, is sufficiently strong to make it very desirable that further observations should be made on an extended scale. The plan of investigation which seems to be required is the following. Let every case of pneumonia be very carefully examined when it comes under treatment, so that the exact localisation and extent of the pneumonic foci may be ascertained. Let it then be treated at once and thoroughly by the local application of ice and by the method of continuous antiseptic inhalation. Then let *every alternate* case be treated immediately by the injection of a stock pneumococcal vaccine, to be followed as soon as possible by a vaccine derived from the patient's own pneumococci, and also from his own streptococci or any other organisms which can be cultivated. If this plan were carried out in 400 or 500 cases, half of them being inoculated and half treated similarly but without inoculation, it would soon be clearly evident whether a vaccine-therapy is or is not of value in pneumonia. If it should turn out that its value is very great, this would not invalidate what I have said about ice and about antiseptic inhalation, any more than the unquestionable value of the anti-diphtheritic serum has made it less true than before that the spraying of the throat every hour with a 1 in 1000 solution of perchloride of mercury is of extraordinary and life-saving value.

V. *The right heart.*—What I have said thus far has had reference to the earliest stage of a pneumonia. The next point to which I wish to draw attention demands careful and persistent observation throughout the whole course of the disease. It might indeed be described as the key of the clinical situation. And yet it is a point which is wholly ignored in most descriptions of pneumonia, is not even mentioned in some of the most recent monographs, and is constantly, and often with fatal effect, overlooked in practice. It is the question of the right heart.

The rapidly increasing obstruction to the pulmonary circulation causes a rise in tension in the pulmonary artery and a consequent tendency to a dilatation of the right heart. The first indications of this may often be detected by careful percussion in the fourth right intercostal space as early as the second day after the initial rigor. If the dilatation of the right auricle progresses so far that the dullness extends two fingerbreadths in the fourth right space dyspnœa becomes acute and is attended by restlessness, insomnia, cardiac oppression, and general distress. At this period the application of a few leeches will give immediate relief and allow of sleep. Very soon after they have completed their work the dullness of the right auricle will be found to have diminished by half a fingerbreadth (1 cm.) or more. The relief will usually last for 48 hours, unless the pneumonic process be extremely acute. At the end of 48 hours the auricle may again be over-distended and may require a repetition of the leeches. But this second relief generally carries the patient through to the crisis.

If the right auricle has been neglected until the fourth or fifth day of the disease it may be greatly over-stretched, especially if the inflammatory congestion of the lungs is widespread. In this case there is an urgent need for venesection. If no relief is thus given by blood-letting, the cardiac action becomes feebler and feebler, not because the wall of the left ventricle is poisoned by toxin, but because the contraction of the ventricular muscle is a peristaltic wave which reaches the ventricle *from the auricles*, taking origin at the sino-auricular node, a small mass of primitive cardiac tissue situated at the junction of the superior vena cava with the right auricle; and because the obstruction in the lungs and right heart prevents a due amount of blood from reaching the left ventricle. The feebleness of the pulse, therefore, in the later days of a pneumonia is not a reason against blood-letting, as a thoughtless observer might argue; it is a strong indication of its necessity. After blood-letting the pulse will be found to be decidedly stronger.

It was not without reason that our forefathers insisted on the necessity for bleeding in pneumonia. They misunderstood its mode of action, and their mistaken theory led to great

[8] Brit. Med. Jour., Oct. 9th, 1909.

excess in practice, but the relief of distress afforded by a moderate bleeding is unmistakeable. No drug in the Pharmacopœia, nor any combination of drugs, can produce the same relief. Yet the necessity for leeches or venesection is very generally overlooked by the practitioner, for the reason that he *has not acquired the habit of determining by careful percussion the size of the right heart in every case in which physical examination of the thoracic organs is required.* Till he has acquired this habit he will be almost certain to overlook the distended right auricle in pneumonia, and his pneumonic patients will suffer much discomfort that might have been prevented, and many patients will succumb before the crisis can occur.

The precise state of the right heart is the most urgent question in pneumonia. It ought in every case, but especially in the later days of the disease, to be the first question to be determined by a careful physical examination, taking precedence of any attempt to determine the locality or the extent of the pneumonic areas. From the fourth to the seventh days the condition of the right auricle very often calls for immediate relief before the lungs themselves are examined. Yet all this is generally entirely ignored. Is it any wonder that pneumonia is so often a fatal disease?

VI. *Cardiac stimulants.*—The most powerful cardiac stimulant in pneumonia is bleeding, for thereby the excessive tension in the right auricle which is paralysing its functional action is temporarily diminished, and it is quite remarkable how promptly the auricle recovers itself when once the opportunity is given. Certain drugs can give powerful assistance to a failing heart. Of these, strychnine in hypodermic injection is much used and highly valued. Oxygen by inhalation is also often recommended. It certainly relieves cyanosis, and thus by promoting the pulmonary circulation it gives help to the heart. But though oxygen often gives relief I have never seen it save a life. And neither oxygen nor strychnine, nor both combined, are of any great service in pneumonia unless the intra-auricular tension is lowered by judicious blood-letting.

Alcohol has long been advocated as a cardiac stimulant, and undoubtedly, by its vaso-paralytic action, it indirectly relieves the strain on a failing heart. But whether it is a direct cardiac stimulant, and, if so, in what way, is still a highly debateable pharmacological and therapeutical problem. Yet the remarkable paper read before the recent London meeting of the British Medical Association[1] by my colleague Dr. W. H. Willcox and Professor B. J. Collingwood, clearly shows that the inhalation of alcohol vapour combined with oxygen has a remarkably beneficial effect in cardiac failure. This was first discovered during experimental researches on chloroform poisoning in animals by Professor Collingwood. The discovery was utilised in clinical work by Dr. Willcox, who has made a large number of careful observations and precise calculations which are given in the published paper. The authors find that the administration of oxygen bubbled through absolute alcohol in an ordinary chemical wash-bottle is a marked cardiac stimulant in cases of heart failure, that it slows and strengthens a rapid feeble pulse, improves its force and volume, and causes a considerable rise in blood pressure. Its administration is pleasant and not irritating to the patient, and it gives rise to no ill-effects.

I had the pleasure of hearing Dr. Willcox read this paper at the Association meeting, and it so happened that a few hours later I was called to see a lady at the last extremity of cardiac failure. After relieving the right heart by leeches and the injection of strychnine, and arresting vomiting by giving nutrient enemata and stopping all food by the mouth, it was advised that the inhalation of oxygen bubbled through absolute alcohol should be tried. I was afterwards informed that this measure appeared to have a remarkably beneficial action on the pulse, and that the improvement after such an inhalation was decidedly greater than that obtained by an injection of strychnine.

It seems certain that we have thus secured a remedial measure of great potency; it is one which is quite simple in use, and it ought not to be forgotten. I suspect that its action is really on the cardiac and vascular centres in the medulla oblongata rather than on the heart itself. But, however this may be, its practical effect may be invaluable in certain critical conditions. And I would add that this fact emphasises the statement of the authors of this valuable paper that "sufficient attention does not appear to have been paid to the method of administration of remedies by inhalation into the lungs." I welcome this statement for the support which it gives indirectly to the method of treatment by continuous antiseptic inhalation to which I have already referred.

VII. *Diet.*—The addition of malted milk powder to milk greatly increases its nutritive effect, and at the same time diminishes the amount of fluid in the diet. This is of special importance when the right heart is dilated. Half an ounce of malted milk powder dissolved in 2 ounces of milk may be given every hour while the patient is awake: for a child the amount may be two teaspoonfuls in 1 ounce of milk. After the right heart has been relieved by leeches it is often useful to allow copious draughts of water to relieve thirst and aid the renal excretion. Half a pint of water may be given every three hours on the day following the use of leeches or venesection.

VIII. *Sleep.*—We are all apt to overlook the great importance of securing sleep *during the first two or three nights* of a pneumonia. An effective hypnotic should always be given at this time; if there is any pain hypodermic morphine is necessary; at this early stage it is quite safe. In the later days morphine must not be given unless the right heart has been relieved, and such relief will often enable the patient to sleep without any hypnotic. Every night's sleep is of importance in pneumonia.

These are, in my opinion, the essentials for a successful treatment of this common and fatal disease. If they were remembered and acted upon by every practitioner I believe that the mortality might be reduced very greatly, perhaps by as much as 50 or 60 per cent.

Weymouth-street, W.

[1] THE LANCET, August. 6th, 1910; Brit. Med. Jour., Nov. 5th, 1910.

THE EDUCATION OF THE DEAF:

ITS PRESENT STATE IN ENGLAND, WITH SUGGESTIONS AS TO ITS FUTURE MODIFICATIONS AND DEVELOPMENT.

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I.

DURING the three years that I have been working as medical inspector of the London County Council schools for the deaf I have had ample opportunity for judging of the working of the present system of deaf education in London, and the opinion to which I have been led thereby has convinced me that the whole system of deaf education in this country needs thorough reorganisation upon wider and more extended lines than is at present the case. A good deal has been achieved by the working of the Elementary Education (Defective and Epileptic Children) Acts of 1899 and 1903, but there is still much to be done before the country can turn out its deaf-mutes as reliable and self-supporting citizens, able to compete with their more fortunate hearing fellows in such a way that the percentage of those who become burdens upon the State is reduced to a minimum. The work of instructing the deaf is a very highly specialised branch of the teaching profession, requiring untiring patience and a high degree of adaptation. Indeed, if genius be an "infinite capacity for taking pains," then the teacher of the deaf has to be a genius of the first order. Only an intimate acquaintance with the work of this devoted body of men and women can give any idea of their labours, of the results which they achieve, or of the obstacles which they have to surmount. Moreover, the looker-on can detect the causes of their difficulties and the reasons why so many of their pupils fail to reach that standard of excellence to which theoretically they should attain under the modern system, and why a certain number of them have either to revert entirely to sign and manual methods of expression, or at least to supplement spoken language therewith.

To assert that the present system is a failure would be manifestly incorrect, but to say that it is a comparative failure is to enunciate a truism which can be established by facts patent to all who care to approach the matter with minds unbiassed by prejudice. That the teachers of the deaf are to blame for this comparative failure is most certainly not the case. The brilliant results which they can

achieve in an, at present, limited number of cases demonstrates clearly their capacity. There is no more self-sacrificing, hard-working, or devoted profession to be found, but its members are working under conditions in which it is impossible to reach perfection: they are contending against many obstacles, of which imperfect classification, inadequate legislation, and lack of sufficient financial assistance form only a small part. At the same time I would not wish it for one moment to be thought that the education of the deaf is not progressing. It is undoubtedly moving forward, but in the present state of our knowledge it is not moving with sufficient rapidity, and although deaf education is probably in a better state than it has ever been, it is in that stage of its evolution when those who are responsible for its well-being require to pause for a space and take a full and careful survey of its condition, with a view to its complete remodelling and reorganisation upon a firmer and wider basis, founded upon past experience and more accurate knowledge. The workers in deaf education comprise a body of young, active, and energetic men and women, who, starting with the experiences left them by their predecessors, are full of new ideas, have wider vision and greater capacity for improvement. They are beginning to see what Kerr Love in his "Study of the Deaf Child" has so ably pointed out, that deaf education must be based, not upon the consideration of different systems, but upon the study of the deaf child as an individual. Unless this fact be universally recognised, not merely by teachers of the deaf, but by the public at large and by legislators especially, the education of the deaf can only move slowly, with many halts and stumblings, towards greater perfection, and cannot reach that goal until several generations are past and gone and much public money wasted.

The whole question is one which must be looked upon from many different aspects—medical, hygienic, physiological, social, eugenic, and financial—and it is my intention in this series of papers to show how, by a due regard to these varied points of view, our present system of deaf education can be remodelled in such a way as to give far better results than have been attained hitherto—results that will fully justify any increased expenditure and will greatly increase the happiness, usefulness, and value to the State of a body of citizens whose only misfortune is, in the great majority, the impairment or loss of one of the most important, if not the most important, of their sense organs.

I have stated that the system of deaf education, as at present constituted, is a comparative failure. Such an assertion must be fully justified. With a view to ascertaining the progress of the scholars under present methods I recently introduced into the London County Council deaf schools a system of marking their attainments as regards articulation and lip-reading. This system is a modification of that suggested by Alexander and Mackenzie.[1] It classifies scholars in four groups—"Very good," "Good," "Sufficient," and "Insufficient"; and the test applied to 548 children in our deaf centres gave the results shown in the annexed table. Strictly speaking, these results apply only to 390 of the scholars (203 boys and 187 girls), as 158 (96 boys and 62 girls) were too young or had been too short a time at school to permit of their being judged with any justice to themselves or to their teachers. They have, however, been included in the table as "not marked."

Mentality.		Normal.			Poor, subnormal, or mentally defective.
Speech at commencement of education.		None.	Residual.	Natural.	Not specified.
Articulation ...	V.G.	17	23	42	2
	G.	67	29	13	5
	S.	53	5	1	12
	I.	60	0	0	61
Lip-reading ...	V.G.	26	26	24	1
	G.	87	20	14	4
	S.	54	9	7	13
	I.	30	2	11	62
Not marked		120	15	5	18

[1] The Functional Examination of the Organ of Hearing in Deaf-mutes, Archives of Otology, vol. xxxvii., p. 507.

It will be noted that this table classifies these children primarily on a basis of mentality, and in order to be quite fair the 98 placed in the column, "Poor, subnormal, or mentally defective," may be left out of consideration altogether. The remaining 450 children of normal mentality are further grouped, according to the amount of speech which they possessed at the commencement of their education, into those who started with no speech at all (inclusive of a few in whom residual speech had been lost by neglect), those with residual speech, and those with natural speech. 140 of these scholars were too young or had been an insufficient time at school to allow of their being marked, leaving 310 whose progress under the present system of deaf education could be fairly accurately judged by this process of marking.

Taking, first, their powers of *lip-reading* it will be noted that of the 197 children who never had any speech 113, or 56·8 per cent., were "very good" or "good," whilst 84, or 42·6 per cent., were "sufficient" or "insufficient"; whilst of the 113 who were lucky enough to be left with residual or natural speech 84, or 73·5 per cent., were "very good" or "good," and only 29, or 25·6 per cent., were "sufficient" or "insufficient." This tends to show how much the retention of speech, which means largely the retention of motor memories of speech, helps in the acquirement of lip-reading—that is to say, in the appreciation of speech movement in others. It will be noted further that 30 of the non-speech children, or 25·1 per cent., were "insufficient"—that is to say, *absolute failures* at lip-reading—against 13, or 11·5 per cent., of those who had residual or natural speech.

Surely the present system of deaf education cannot be the best when it gives results such as these, in which 42·6 per cent. of the scholars in whom speech was originally absent are "insufficient" or only "sufficient" in their knowledge of lip-reading, "insufficient" meaning that they are incapable of reading other people's lips sufficiently to gather what they are saying, and "sufficient" that they are only a little better.

The teaching of lip-reading is, however, only one part of the aim of deaf education; it has also to give speech to the dumb—that is to say, it must so teach them articulation as to make their speech intelligible to those with whom they come in contact in after life. How many people—apart from teachers of or workers among the deaf—will not admit that they have difficulty in understanding the conversation of the average educated deaf-mute? How is this duty fulfilled in respect of the children who are under discussion in this analysis? Of 197 boys and girls who had no speech on admission, only 84, or 42·6 per cent., had articulation which could be marked, by the teachers themselves—who, from being continually in contact with the deaf, can probably understand them better than the average person—as "very good" or "good"; and only 17, or 20·2 per cent., of these (8·6 per cent. of the whole 197), belonged to the former category. Of those marked "sufficient" or "insufficient" (and the majority of the former would probably be understood with difficulty by anyone who was not used to the deaf), there were 113, or 57·3 per cent.; and of these, 60, or 53·09 per cent. (30·4 per cent. of the whole 197), were "insufficient"—that is to say, *oral failures*, children to whom the oral system had failed to give speech.

In strong contrast are the results with the 113 children who had residual or natural speech on admission. Of these, 107, or 94·6 per cent., were "very good" or "good" (the former, as is seen by the table, being in excess), whilst only 6, or 5·3 per cent., were "sufficient," and none were "insufficient." Here the system had succeeded in preserving to the great majority of its pupils the speech which they had retained when they had become deaf. I shall have to refer to this later when I come to the discussion of hereditary tendencies to speech in the congenitally deaf.

There is no need for my present purpose to analyse results under classification into congenital or acquired, totally or partially deaf. My object is rather to show that the present system does not produce a sufficiently high percentage of successes under existing conditions, and I consider that the figures just given amply bear out my contention that those who are now working have, under the present *régime*, too uphill a battle to fight, too many obstacles to contend with, too hard a task to master, to enable them to achieve the

successes that should come rightly from modern methods of deaf education.

That the failures are in greater proportion than should be the case is also demonstrated by the number of deaf persons who revert to signs as a method of communication, although I am inclined to the opinion that this reversion is partly due to the baleful effects of so-called missions to the deaf.

It is somewhat difficult to say definitely how long the oral system of deaf education has been in vogue in London, as it was practised to some extent by Joseph Watson at the British Asylum for the Deaf and Dumb (now the Old Kent-road Deaf School), founded in 1792. Watson was the nephew of Thomas Braidwood, who had taught privately in Edinburgh and in London prior to 1792, keeping his methods secret. Boswell[2] mentions that Dr. Johnson visited Braidwood's school and gave liberal praise thereto in his "Journal of a Tour to the Hebrides." "When he visited it," says Boswell, "a circumstance occurred which was truly characteristical of our great lexicographer. 'Pray,' said he, 'can they pronounce any *long* words?' Mr. Braidwood informed him that they could. Upon which Dr. Johnson wrote one of his *sesquipedalia verba*, which was pronounced by the scholars, and he was satisfied."

The birthplace of the oral system was, therefore, in the British Islands, but, strange to say, between 1809, when Watson wrote a book upon his methods, and 1865 it was so completely abandoned that in the latter year Van Asch wrote that "the articulation of the deaf and dumb is of rare occurrence in this country." It will be remembered that the deaf child who makes so pathetic a figure in Dickens's "Dr. Marigold's Prescriptions" was not taught upon the oral system. So completely had oralism disappeared in this country that when it was revived it was as the "German System," and as such it is largely known now—an interesting example of the regard paid to home products!

Kerr Love[3] has given the reasons for this remarkable decline from oralism to manualism as, first, that oralism was difficult for both child and teacher. I would here ask the reader to take note of the fact that Watson would not take pupils until the age of 9 years, a point of very great importance, as I shall show later; and, secondly, that the Abbé de l'Epée unselfishly conceived his sign and manual method and carried it out openly and above board, whereas the method practised by Braidwood in Edinburgh and London was exploited for his personal and family benefit and its details carefully kept secret.

There is no better exposition of the advantages of oralism than the proposition laid down by Watson as the basis of his teaching articulation. This proposition is quoted by Kerr Love,[4] and I quote it again here:—

> Words and phrases must excite ideas in us by association, and they excite ideas in us by no other means. ..... The more numerous the means of association the more perfect the recollection, or, in other terms, the more frequent the recurrence of words and their corresponding ideas to the mind. Thus persons who have all four means—that is, who can hear, speak, read, and write—retain a discourse much better, and have far greater facility in expressing themselves, than persons possessing only two of them, that is, illiterate persons who can hear and speak, but who cannot read nor write. Now, as deaf and dumb persons educated without articulation can only have two of the means—that is, the impressions made upon the eye by characters, the action of the hand in writing—can it be questioned that we render them an essential service by adding the actions of the organ of speech—a very powerful auxiliary, since by it words become, as it were, a part of ourselves, and more immediately affect us.

These words convey, better than any other, the superiority of oralism over other methods of deaf education.

The special teaching of the deaf child under the London School Board was begun in 1874, at Bethnal Green, with a class of about four or five children. Here a compromise was made between the two systems, teaching being partly oral, partly sign and manual.[5] In 1877, however, a pure oral school was started, and after the Milan Congress in 1880 oralism was more generally adopted, and it received great impetus after the schools became certificated by the Board of Education in 1893 and inspected by Mrs. Thurston Holland, who was a strong oralist. It was not until 1893 that an Act was passed making the education of the deaf compulsory, and not until 1907 that the ratepayer became taxed for the whole cost.

[2] Life of Johnson, Croker's edition, 1866, p. 403.
[3] Report on the State of Education in British and Irish Schools for the Deaf, p. 5.
[4] Ibidem, p. 6.
[5] London at School, by H. R. Philpott. London: Fisher Unwin, 1904, p. 258.

The oral system has, therefore, been practised in our London schools for some years now, but it cannot be said to have had a fair chance until the past seven or eight years, as before then normal deaf children were mixed with mentally defectives and other scholars incapable of benefiting. These cases are now sent to the special institution for blind and mentally defective deaf-mutes at Homerton. I wish it to be understood that these remarks refer entirely to our State schools, and that I have not alluded to any results obtained in any other deaf schools in London. I shall, however, do so later.

The brief and concise sketch that has been given will serve to show that the education of the deaf of to-day is on a firmer basis than it has been hitherto. It is when a system has become established upon a sure foundation and has attained some degree of stability that the time has arrived at which it is advantageous to glance around, and, as it were, to take stock. By that means it can be seen what points are good and require developing, what points are weak and require strengthening, what points are uncompromisingly bad and require eliminating. I think that deaf education has reached that period now. The present system has been working for seven or eight years; it is high time to analyse results, to take stock, and to find out where is the profit and where the loss.

The results which I have already given above demonstrate the fact that if a number of scholars be taken consecutively and without selection, save as regards mentality, the successes do not compare as favourably with the failures as the theory of modern deaf education leads one to expect. Our first duty is to find out why this is so. Why, among children of normal mentality, who were either born deaf or who became deaf so early in life that they commenced their school instruction without the gift of speech, who are, in other words, both deaf and dumb, do we find that only 42·6 per cent. have learned to articulate well enough to merit classification as "very good" or "good," and that those who are absolute oral failures reach the high percentage of 30·4?

I believe that the answer to this question is two-fold—too late a commencement of education on the one hand, and a defective classification of the deaf child on the other. It is these two factors which will occupy mainly these articles, together with one or two matters of minor import so far as deaf education is essentially concerned, but of great importance as contributories to success. As regards the two main points, a careful examination of the physiological conditions under which the normal child acquires speech will demonstrate the former, whilst the application of the results of school medical inspection will modify and improve the latter.

Before entering upon the discussion of these two points, which will occupy the two succeeding articles, it will be as well to inquire into the results obtained elsewhere in the metropolis, and for this purpose I shall take the well-known school of the Association for the Oral Instruction of the Deaf and Dumb, at 11, Fitzroy-square. This institution, one of the most deserving charities in London, was founded in the year 1870 by the late Baroness Mayer de Rothschild, who, with the generosity so characteristic of the charity of her community, extended its benefits to embrace all deaf children, irrespective of denomination.

In the words of Mr. Sibley Haycock, the director, to whom I wish to express my indebtedness for the information here given: "The Fitzroy Square Oral School for Deaf Children is quite purely oral. The young pupils are trained to understand and to use spoken language from the beginning. Speech is introduced before the children can themselves articulate, and from the first day of their school life we begin to lay the foundations of the speech habit. They are talked to, directed, and instructed by speech alone. Later on, writing is used, but only to the same extent as in ordinary hearing schools. *Signs and finger spelling have no place in our system.* Not only do the teachers make no use of them, but they are rigidly excluded from the school-room. The little children in the kindergarten are allowed to express themselves by means of natural gestures and pantomime, but these forms of language are displaced as soon as possible by spoken and written words. Our aim is to make speech the medium of thought." (The italics are mine.)

I would draw attention to the fact that the method of instruction thus outlined appears to be based upon the lines of the normal physiological acquisition of speech by hearing

children, natural gesture and pantomime being allowed with the very young children in the kindergarten class, to be dropped with the acquisition of speech. A certain amount of gesture and pantomime is natural, but the greater the command over speech language the less are they used. The savage and the illiterate employ gesture more than the educated, and the savage more than the uneducated white. Indeed, the command of speech language can be tested by the putting of questions which can be answered by speech or by speech assisted by gesture, as, for instance, the request to define a spiral staircase. In the teaching of the deaf, therefore, where it is of paramount importance to teach as much speech as possible, any language by signs or gestures must be rigidly excluded as soon as elementary speech teaching is begun.

The average age of admission to 11, Fitzroy-square, since 1894, excluding pupils who had been under instruction before coming to the school, has been 5·8 years. The age at which the Act insists that education shall commence in the case of deaf children is 7 years, and, although a grant will be given by Government at the age of 5, it is seldom that pupils are admitted to the London County Council deaf centres before the age prescribed by law. I point this out because it is one of my contentions that the best results are not obtained by the oral system on account of the late commencement of deaf education.

The percentage of oral failures at Fitzroy-square, where the pupils are admitted at least one year earlier, taking the average, than in the London County Council schools, has been the subject of inquiry by me, and the reply of Mr. Sibley Haycock is as follows: "I can give no more definite answer to this question than to say that of the 18 children who have left school since my appointment here in 1907 we have had five oral failures—i.e., as regards speech and lip-reading—and these five were either subnormal as to mentality or entered the school quite late in life, and attended intermittently. One boy, for example, was 14 before receiving any instruction. This number roughly represents 27·7 per cent. of the pupils who have left since 1907."

In the analysis which I have given from our London County Council deaf centres, the subnormal in mentality have been separated and not taken into account, and we have seen that of the remainder of normal mentality the percentage of oral failures was 30·4. It is reasonable to consider that, were the oral failures at Fitzoy-square computed in the same way—viz., if those whose mentality was poor, subnormal, or defective were segregated—the percentage would be less than 27·7 and would therefore compare even more favourably with the results given above. One must, however, take into consideration, when making the comparison, that the teaching of this school has been consistently oral, and *purely oral* for 40 years—since 1870—whilst it was not until 1877 that an oral school was commenced under the auspices of the London School Board, and that, as I have said, the oral system has only had a fair chance under the Board's successor during the past seven or eight years.

I have already said that the education of the deaf is a matter involving wide issues, one which can be looked at from many points of view. I shall endeavour here to discuss it from some of these aspects, and I shall, therefore, postulate the present needs of this great and many-sided question as follows:—

1. The need of a classification of the deaf child which shall be upon a more scientific and more comprehensive basis than that at present in use. In dealing with this matter, I shall review the methods of education in other States and countries, and I shall make suggestions as to the best classification to be followed.

2. The need that the education of the congenitally deaf and of those very deaf children who, by reason of the early age at which they acquired their deafness, have not developed speech, should be commenced at a much earlier age than is now the general rule, in order that they may receive that physiological, in contradistinction to pedagogical, training to which they have as much right as the normal hearing child.

3. The need for the exercise of greater care of the deaf child whilst at school, by care committees and similar means, whereby it can be assured that his attendance at school is regular, his meals are adequate, that he is not neglected or exploited by bad or immoral parents, and that he is removed from the influence of bad companions and bad home surroundings.

4. The need for encouragement of the deaf child to mix with hearing people. To this end I would advocate a longer course of education and supervision by teachers, and, not unimportant, a more careful supervision of religious missions to the deaf.

5. The need to make an endeavour to diminish the number of deaf children requiring special education by the application of eugenic principles to deaf-mutism in the case of the congenitally deaf, and by a better care of the ears in children by medical practitioners.

1. *The need for a scientific classification.*—In order to understand fully the necessity for a better classification of the deaf child and its important bearing upon deaf education, it will be necessary to review briefly the methods at present obtaining in those countries in which such classification exists. By this means the best characteristics can be selected and the errors avoided.

Taking first *Germany*, it will be a surprise to many readers to learn that in deaf education the Germans are certainly lacking. Every deaf child is taught by the oral system, and by the oral system alone. "The German plan," says Kerr Love,[6] "of teaching the deaf by the universal application of the oral method is like the fitting of all kinds of sight defects with one type of eye-glass." Apparently in this country all types of deaf child are herded together to be taught on one system. In Berlin, it is true, many of the semi-deaf are sent to the board schools, where special arrangements are made for them, and there is in the same city a special school, instituted in 1907,[7] for "hard of hearing" children, with specially trained teachers, but it includes not only the hard of hearing children of the most varied capacity, but also deaf-mutes with residual hearing.

As a matter of fact, Germany, supposed to be so much to the fore in matters educational, but who is, by her methods, in danger of turning out uniform machines rather than rational men and women, has no proper deaf classification, and educates all her deaf by rote, without any regard to the deaf child individually.

For the sake of contrast, we will take *America* next, where is to be found a quite different state of affairs. There no special system is to be met with, but a deal of experiment. The period of instruction lasts longer (10 to 12 years in comparison with eight in Germany), and this tendency to keep the deaf child longer at school is further emphasised by a movement to start his education at an earlier age. Both these tendencies are, in my opinion, valuable, as will be seen later. Further, at the Gallaudet College in Washington the deaf youth of both sexes can take a university course and graduate like their hearing fellows. Altogether, as Kerr Love says, more money is spent on the deaf child in the United States than in any other country in the world, "and although not the shortest, nor the cheapest, nor in any sense the best way, this is one way of getting at the truth—and the Americans will get at the truth whatever it costs."[8] In this country at least a system of scientific and practical classification is being slowly worked out by experiment.

In two of the smaller states of Europe the education of the deaf is based upon a scientific classification, which, whatever may be its errors, takes into account the deaf child as an individual. These are *Schleswig-Holstein* and *Denmark*. The former, which has a population of about a million and a quarter, had some 132 children in its two deaf schools in 1906, the proportion of the semi-deaf being 30 per cent. They are classified on a basis of mentality. All go to a preparatory school, where after two years the dullest ("Class C") are set aside and allowed the help of free signing in addition to oral training, which, as in Germany, is the "system." The brighter ones, classed as "A" and "B," are removed to another school to be taught orally.

In *Denmark* the deaf-mute ratio is about 1 to 1600 of her population, and in 1906 the deaf children of school age numbered about 334. All are first sent, as in Schleswig-Holstein, to a preparatory school, which is situated at Fredericia. After one year these are classified according to their amount of hearing. Those who have residual hearing are drafted to a school at Nyborg, to be trained orally, no

[6] The Study of the Deaf Child, p. 4.

[7] Reinfelder: Schwerhörigkeit und Hörschule, Die Jugendfürsorge, 1909, Heft 3.

[8] The Study of the Deaf Child, p. 6.

distinction being made as to mentality. The totally deaf remain at Fredericia for another year, when they are again reviewed, this time from the mental standpoint, and the mentally dull are passed on to a school at Copenhagen, to be taught by the manual alphabet. The totally deaf of good mentality remain at Fredericia to be instructed by the oral method. This system has its faults, but it is rational and scientific, for it aims at a classification which takes due note of the individual capacities of the child, and is based upon the double foundation of mental capacity and residual hearing.

In *Russia* it is said[9] there are over 200,000 deaf-mutes, but only four educational establishments. For 30 years signs have been entirely abandoned in favour of oral teaching. Judging by the writer quoted, the deaf that are taught are taught well, especially by Mr. Enko, the present master of the Imperial Deaf and Dumb School. I am, however, unaware of any system of classification in this country.

In *Italy* there is no law to oblige the Government, on the one hand, to give, and the deaf, on the other hand, to receive, an elementary education, so that 73 per cent. remain in ignorance and isolation. Charity, however, provides for about two-fifths of the deaf who are of the age and condition to be admitted to a school. Although theoretically purely oral, practically the education offered is by a combined method. Further, although the necessity for classification of the scholars is admitted in theory, it is ignored in practice.

France—where the Abbé de l'Epée founded his world-famous school in 1760, and which was thus the pioneer country in deaf education a century and a half ago—is by no means in the foremost rank in that great work now. It numbers 65 schools for the deaf, some belonging to the State, others private, others managed by the clergy (priests or brothers), and others again managed by religious communities. These schools contained, in 1907, 3894 children. According to M. Adolphe Bélanger,[10] however, no classification of the pupils is attempted.

In *Holland* there are four schools—at Groningen, St. Michiels-Gestel, Rotterdam, and Dordrecht. These all originated in private charity and enterprise, there being no Government compulsory education for the deaf. Instruction is mainly oral, and there is some attempt at classification in the two large institutions at Groningen and Rotterdam, where the classes are more or less divided on a mental basis. There is a "class for abnormals" at the former school, and at Rotterdam a "class for very dull children." At Groningen there is also a special class for semi-deaf children.

Passing now to our own country, it will be found that the three kingdoms are not particularly united in their methods. In *Scotland* the system of instruction is that known as the combined method.[11] Scotland is, however, lucky in possessing an enthusiast in deaf-mute work in Kerr Love, whose knowledge of the deaf-mute and his education is unrivalled. Largely owing to his exertions a system of classification is being evolved. Knowing Kerr Love as so persistent an advocate for the study of the deaf child and the subordination of all systems and methods to him, it can be said with confidence that, if the authorities in Scotland will but be guided by the experience and scientific reasoning of this authority, that country will take first rank among the deaf-educating nations.

Ireland has no legislation as to deaf education, and there is no compulsion for the deaf-mute. Instruction is carried out at Belfast, Cabra (Dublin), and Claremont. The teaching is mainly manual, there being a small oral school at Claremont, near Dublin. Classification is apparently practically non-existent.

In *England* classification is in a condition of evolution; it is, therefore, all the more important that those who are in authority should have the matter laid before them in all its aspects. This is especially the case in London, where deaf education is, I hope, on the eve of important changes. The present arrangement in the metropolis—that under the London County Council at least—is that there are seven day-schools and three semi-residential schools with a roll of between 600 and 700 scholars. These schools are scattered about London, so as to serve different districts as far as possible. Instruction is oral, except at Homerton, a semi-residential school to which the mentally defective and blind deaf-mutes are sent, with a certain number of oral failures. The method in use there is adapted to the individual child. The sexes at Homerton and at the seven day-schools are mixed, but at two of the semi-residential schools, at Wandsworth and Anerley, they are separated, girls going to the former and boys to the latter. These are in the nature of advanced schools, children between the ages of 13 and 16 attending them and being instructed in dressmaking, laundry work, bootmaking, tailoring, carpentry, and baking. Laundry work, bootmaking, and carpentry are also taught at Homerton.

It will be seen that in London some endeavour at classification is made upon a basis of mentality, and as I have already pointed out it was not until some provision for mentally defective deaf-mutes was made by the opening of the Homerton school that the oral system really had a fair chance given to it. There is, further, an additional classification based upon residual hearing now beginning. My great object is to see the scheme of deaf education embracing not only the very deaf and the semi-deaf but the deaf of all and every degree. As long ago as 1906 I drew attention to the neglect of the slightly deaf child in England[12]; and the following year I read a paper upon the same subject before the Second International Congress of School Hygiene held in London.[13] Since that time the progress of school medical inspection has been such that we are able to detect some at least of the deaf children in the elementary schools, and these are specially seen by me with a view to educational treatment. Of the slightly deaf among them a number during the past year (1910) has by this means been put in the way of treatment, whereby their deafness has been arrested and they have been able to return to their original school. Others have been judged able to return to their original schools provided they are put in the front row.

The greatest step forward that has been made in our London system during 1910, however, has been the institution of special classes for "hard of hearing" children, by which term is meant those scholars who are too deaf to be educated in the elementary school, even if placed in the front rows, but are not deaf enough to be put among deaf-mutes and very deaf children. The success of the first of these classes is undoubted, and it is sincerely to be trusted that others will shortly be opened. The lines upon which they should be run will be discussed later, but I am pleased to say the idea is that advocated by me in 1908.[14]

It will thus be seen that the evolution of a system of classification is in London in an active stage.

Having thus detailed the state of deaf education in different countries in the civilised world it remains to be seen what improvements can be made. The first question for discussion is, therefore, What would be the most practical scheme for the classification of the deaf child for purposes of education, and the one most likely to give the best results?

(To be continued.)

[9] THE LANCET, July 9th, 1910, quoting the "Novoe Vremya."
[10] Report of the International Conference on the Education of the Deaf, 1907, p. 54.
[11] Addison: Ibid., p. 110.
[12] Slight Deafness in Children, British Journal of Children's Diseases, September, 1906.
[13] The Problem of the Deaf School Child, Transactions of the Second International Congress of School Hygiene, London, 1907, vol. ii., p. 839.
[14] Deafness in Relation to School Medical Inspection, British Journal of Children's Diseases, November, 1908.

DEVON AND CORNWALL EAR AND THROAT HOSPITAL, PLYMOUTH.—The annual meeting of the subscribers to the Devon and Cornwall Throat Hospital was held on Feb. 10th. The medical report was satisfactory, and showed an increase in the number of operations. This, the committee states, "was largely due to the inspection of school children, and raised the question as to their treatment. The State now insisted on the treatment of these children for various defects, and as in other cases where the State insisted on treatment the State should pay for it. It was hardly fair to the institution or to the honorary medical staff that the whole burden should be thrown on them." The financial statement showed a small favourable balance. The meeting decided to enlarge and improve the hospital at an estimated cost of about £2000, and a special appeal will be made for that object.

NOTE UPON THE EXAMINATION, WITH NEGATIVE RESULTS, OF THE CENTRAL NERVOUS SYSTEM IN A CASE OF CURED HUMAN TRYPANOSOMIASIS.[1]

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THIS is the first case in which "a chance has occurred of examining a cured case of human trypanosomiasis post mortem," according to the statement of Mr. C. A. Wiggins, the acting principal medical officer of the Uganda Protectorate, who has kindly forwarded me the tissues for microscopic examination.

Summary of the history of the case.—A Sikh, belonging to the 4th K.A.R. (aged 30 years at death), was found to be suffering from trypanosomiasis in June, 1905, and received treatment with inorganic arsenic. The previous history, as far as ascertainable, compiled from extracts of reports and history sheets, is given in the account below, but, in brief, it may be assumed that the drug was given intermittently for 18 months or more and pushed till toxic symptoms of neuritis, mental dulness, &c., rendered further energetic treatment impossible; trypanosomes were then no longer obtained by puncture of the glands. Unfortunately there is no note of lumbar puncture having been performed until a few months before death, therefore we do not know whether invasion of the sub-arachnoid space ever occurred either before or after the treatment. But it is probable that trypanosomes were never present in the cerebro-spinal fluid, for if they were the symptoms of sleeping sickness would in all probability have come on in spite of treatment by atoxyl. Sir David Bruce in December, 1908 (that is, three and a half years after the trypanosomiasis had been discovered), saw this man and stated that he appeared to be in excellent health. A year later he was seen by Captain A. E. Hamerton, R.A.M.C., and Captain H. R. Bateman, R.A.M.C., who reported no symptoms of sleeping sickness. They made a very careful investigation of the blood, both by microscopic examination and by experimental injection into monkeys; the results were negative. In June, 1910, lumbar puncture was performed, and 17 cubic centimetres of fluid were withdrawn; the centrifuged fluid showed no lymphocytosis or trypanosomes; and injection of the fluid into a monkey was followed by negative results. The patient was attacked with pneumonia in August, 1910, and he died three days after admission to the hospital. At the post-mortem examination grey hepatisation of the whole right lung was discovered. Beyond fibrosis and induration of the cervical and inguinal glands there was nothing noteworthy in the appearance of the organs and tissues. The brain was quite normal in appearance, and there was no excess of fluid. It may be mentioned that this man had contracted syphilis on July 27th, 1906, and he was treated for some time with mercury, and a note on Feb. 15th, 1908, is as follows: "Condition the same as August 6th, 1907, but no trypanosomes found in blood or glands, due to fact of taking mercury for syphilis."

Histological examination.—Sections were prepared of portions of the cerebrum, cerebellum, and medulla oblongata, by all the methods which I have previously adopted for the examination of the tissues in cases of sleeping sickness. I found no trace of the characteristic meningeal and perivascular infiltration, nor of gliosis. Sections of the spleen, liver, and kidney were also examined with negative results. I have shown that there is a parallelism between the intensity of the signs and symptoms of sleeping sickness and the diffuseness and intensity of the lymphatic perivascular infiltration with lymphocytes and plasma cells which is the main cause of the clinical phenomena. It may be asserted that this case proves that human trypanosomiasis is curable, but it does not prove that sleeping sickness is curable, for I contend that the diagnosis of sleeping sickness can only be made when there is proof that the trypanosomes have invaded the sub-arachnoid space. The case emphasises the importance of early diagnosis of the infection and the value of early energetic treatment by organic arsenic preparations. How far the administration of mercury assisted to complete the cure is uncertain.

The previous history of the case as far as ascertainable (compiled from extracts of the reports and history sheets of Dr. H. B. Owen, medical officer to the Civil Hospital, Entebbe), may be summarised as follows:—

June 22nd, 1905: Trypanosomiasis. Received treatment inorganic arsenic. Dec. 4th, 1906: Gland puncture. Trypanosomes +. 6th, 7th, 16th, and 17th: Injections 2 c.c. atoxyl 20 per cent. 18th: Glands trypanosomes +. 28th: Glands trypanosomes −. Atoxyl 20 per cent., 2 c.c. 29th: Repeated atoxyl 20 per cent., 2 c.c. Jan. 1st, 1907: Glands trypanosomes −. Feb. 8th: Glands trypanosomes −.

Condition.—Arsenical neuritis. Drowsy-looking. Rheumatic pains. August 6th, 1907: Condition far from satisfactory. Irregular fever, rapid pulse. Dull and stupid. Cervical glands enlarged. Trypanosomes not found in glands since March. Energetic treatment with arsenic impossible owing to symptoms of poisoning rapidly appearing. Feb. 15th, 1908: Condition the same as on last date, but no trypanosomes found in blood or glands, due to the fact of taking mercury for syphilis (contracted July 27th, 1906).

General conditon.—Dec. 16th, 1908: Strong, well nourished. No tremors. Reflexes normal. Gland puncture and blood examination trypanosomes −. Differential count. Lymphocytes 70 per cent. Some tendency to drowsiness when unoccupied. Last treatment, two injections kharsin, May, 1908. 18th: Proceeded to Mpumu to do duty with the Royal Society's Sleeping Sickness Commission. Report by Sir David Bruce—"This man appears to be in excellent health." Returned to Entebbe. Dec. 16th, 1909: Report by Captain Hamerton and Captain Bateman, Sleeping Sickness Commission, Mpumu—"No symptoms of sleeping sickness."

Blood examination.—Peripheral blood: Negative results, 14 occasions. Centrifuged peripheral blood: Results negative. Blood from median basilic vein: Results negative. Blood from median basilic vein centrifuged: Results negative. Dec. 16th, 1909: 4 c.c. blood from median basilic injected into monkey. 29th: 5 c.c. blood from median basilic vein injected into monkey. First monkey examined 15 times; results negative. Second monkey examined 12 times, with negative results. June 13th, 1910: Lumbar puncture 17 c.c. Cerebro-spinal fluid abstracted centrifuged. Trypanosomes −. No excess white cells. 12 c.c. injected into monkey. Monkey examined twice weekly over one month; results negative.

General habits.—Intemperate. Had had gonorrhœa and syphilis.

Post-mortem appearances 14 hours after death.—Body of lean but in no way emaciated man. Externally the cervical and inguinal glands were small, hard, and shotty. Chest: Parietal and visceral pleura adherent right side, due to recent pleurisy. The right lung weighed 58 oz. On section the whole lung was in a state of grey hepatisation. The left lung weighed 14 oz. Pleura and lung substance normal. Heart: Weight 12 oz. Right heart distended with blood clot. All chambers and valves normal. The glands at the root of lungs and around bronchi and trachea were enlarged and soft, and some were purulent. Microscopical examination of this pus showed organisms resembling pneumococci. The liver weighed 89 oz. and was enlarged and congested. On section it was soft and friable. Probably some fatty change. No obvious fibrotic changes. The spleen weighed 14 oz. It felt hard to the knife on section, was pale in appearance, and there was an excess of fibrous tissue on cutting open. Kidneys: Right, weight 5 oz.; left, 6 oz. Both were swollen, the kidney substance bulging from the capsule when cut into. Both capsules were a little adherent. Cortices undiminished. The whole kidney substance appeared a little paler than normal. The pancreas and suprarenals were normal. The stomach was slightly dilated; no gastritis; some post-mortem staining. The intestines were normal; mesenteric and retro-peritoneal glands not enlarged. Brain: Calvaria normal. Weight of brain, 52 oz. No thickening of membranes. Brain substance normal. Ventricles normal in size and no excess of fluid. Portions of the liver, the spleen, the kidneys, and the cerebral cortex and cerebellum were preserved for microscopical examination in England.

Nottingham-place, W.

[1] A paper read before the Royal Society on Nov. 3rd, 1910.

REMARKS ON THE TREATMENT OF SYPHILIS WITH DIOXY-DIAMIDO-ARSENOBENZOL ("606").

BY C. F. MARSHALL, M.SC., M.D. VICT., F.R.C.S. ENG.

IT is much to be regretted that arsenobenzol has been introduced in a manner which is more in accordance with the methods of commercial enterprise than with the ethics of scientific medicine, for such methods are naturally calculated to create a strong prejudice against it. Nevertheless, as its inventor is one who holds a high position as a medical scientist, it is necessary to deal with this preparation on its merits and to judge, if possible, the position which it is likely to occupy in the therapeutics of syphilis.

The two main questions to be decided are: first, is arsenobenzol capable of replacing mercury and iodides in the treatment of syphilis? Secondly, if it is incapable of doing this, is it of value as a third weapon against syphilis? Before any drug can replace mercury and iodides it must be proved capable of producing one or more of the following effects: (1) the realisation of an abortive cure of syphilis; (2) the prevention of tertiary or parasyphilitic manifestations; and (3) the healing of syphilitic lesions with greater rapidity, greater constancy, and at the same time with less liability to relapse and recurrence than is the case with mercury and iodides. It must also compare favourably with the latter as regards dangerous toxic effects. Let us see whether arsenobenzol has been proved to fulfil any of these conditions.

1. On the strength of its remarkable effect on relapsing fever in rats it was at first hoped that arsenobenzol might effect an abortive cure of syphilis, or *therapia sterilisans magna*. However, this idea has, I believe, been abandoned by most of the recent investigators. In any case, an abortive cure of syphilis is impossible to prove, at any rate in the human subject, owing to the long latent periods that may elapse between the early and late manifestations. Those who pin their faith on the Wassermann reaction claim that a persistently negative reaction signifies a cure; but, considering our ignorance of the real nature of this reaction, and the knowledge that it is not specific for syphilis, it is doubtful if this evidence can be accepted as absolutely conclusive. Moreover, as Flashman and Butler[1] have pointed out, in a case of syphilis which is apparently cured an encapsuled focus of disease may remain in some part of the body, incapable of producing the bodies which cause the complement deviation of the Wassermann reaction, unless roused to activity by some extraneous cause. Obviously, such a case might continue to give a negative reaction, which would be misleading.

Another fact often brought forward as evidence of the cure of syphilis is the occurrence of reinfection; but in the light of recent observations it appears that reinoculation with syphilis may be successful before the original infection is extinct. A few years ago Finger and Landsteiner[2] suggested that as a syphilitic subject might have recurrent lesions for years due to his own endogenous spirochætæ, so might he have lesions during the same time due to exogenous spirochætæ. More recently Pinard[3] has shown that reinfection, or rather superinfection, can take place during the primary period up to 31 days after the appearance of the first chancre, and also during the tertiary period. He concludes that immunity is complete only during the secondary period, that it is incomplete during the primary period, and gradually weakens during the tertiary period.

It appears, therefore, that it is impossible to prove that an abortive cure of syphilis can be realised by arsenobenzol or any other drug.

2. The second question—whether arsenobenzol prevents tertiary and parasyphilitic lesions—need not detain us, for it would take many years to prove. It may be mentioned, however, that this point has been proved for mercury by Fournier's statistics,[4] so far as statistics can prove anything.

3. The third question is whether syphilitic lesions heal under arsenobenzol more rapidly, more constantly, and with less liability to relapse and recurrence than under mercury and iodides. Taking this question as a whole, the answer appears to be a negative one, although on certain points there are differences in the results of different observers.

As regards the rapidity and constancy of action, the earlier investigators described this as "marvellous," "miraculous," and even "dumbfounding." Obsessed by their enthusiasm for the new drug, they seemed to have forgotten that it is quite a common thing for syphilitic lesions to disappear with "marvellous" rapidity under mercury and iodides; indeed, before the discovery of the spirochæta pallida this rapidity of disappearance was often a source of embarrassment by obscuring the diagnosis, in cases of doubtful chancre, for instance.

I have before me photographs of two typical cases treated by arsenobenzol; one, a primary chancre which healed in eight days, the other an early secondary syphilide which mostly disappeared in two weeks. It is quite common for such lesions to heal in the same time under mercurial treatment, especially by inunction. Gottheil,[5] one of the most recent and more impartial observers, says: "Its immediate effect may be better, in some cases, than that of mercury; in others it is slower and less certain; in some cases it fails." Professor Gaucher,[6] who has recently published the results of his experience at the St. Louis Hospital, finds that there are some cases which resist the action of arsenobenzol; others which heal with the same rapidity as under mercury; others, again, which heal more rapidly, but the latter are superficial ulcers and mucous patches which are easily healed by mercury. Further, he finds that arsenobenzol has no effect on visceral syphilis, nor on parasyphilitic affections such as tabes, general paralysis, and lingual leucoplakia.

As regards liability to relapse and recurrence, the earliest reports did not mention these because they were published before relapses had time to occur. Very soon, however, relapses were noted, but were attributed to too small a dose. More recently relapses have been shown to be common after the average dose of 0·6 gramme.

I think it will appear obvious from the foregoing considerations that mercury cannot be replaced by arsenobenzol in the treatment of syphilis, at any rate in the present state of our knowledge. In fact, the so-called "treatment of syphilis by '606'" is a misnomer, it is really the treatment of certain symptoms of syphilis, not treatment of the disease itself.

The next point to consider is whether arsenobenzol is of use as an alternative drug, more especially in cases where mercury fails. It is in the latter class of case that Gaucher[7] thinks it chiefly useful, but not always, for he has seen lesions which resisted the action of both mercury and arsenobenzol. As regards these cases which are said to be resistant to the action of mercury, as Gaucher remarks, they are very rare. In my experience there are few lesions of primary, secondary, or tertiary syphilis which cannot be healed by judicious combinations and variations of mercurial and iodide treatment. I think the failure is more often due to the method of administration than to the drug itself or to any idiosyncrasy in the patient. Failure is often due to the adoption of routine methods. One of the most intractable cases of tertiary syphilis I ever saw was healed by small doses of potassium iodide (5 grains) given in large quantities of hot water. This case, which had resisted all the usual methods of mercurial and iodide medication, is mentioned by Mr. A. H. Ward.[8] It shows what can be done by varying the doses and methods of administration of the time-honoured drugs. It appears, therefore, that if arsenobenzol has certain indications as an alternative form of treatment, these indications are extremely limited.

Lastly, we have to consider the toxic effects and possible dangers of this drug. In the first place, several deaths have occurred after its injection; some of these appear to have been directly due to the drug; while others, if not entirely attributable to it, were probably accelerated thereby. The method of intravenous injection seems to be specially dangerous, and requires considerable dilution of the preparation. Hutchinson[9] mentions a case of primary chancre in a healthy woman which almost terminated fatally after an

[1] Brit. Med. Jour., Oct. 9th, 1909.
[2] Sitzungaberichte der Kaiserlichen Akademie der Wissenschaften in Wien, 1906.
[3] Thèse de Paris, 1910.
[4] Traité de la Syphilis, vol. ii., part 1, 1901.
[5] Medical Record, Dec. 31st, 1910.
[6] Gazette des Hôpitaux, Nov. 15th, 1910.
[7] Bulletin de l'Académie de Médecine, Nov. 15th, 1910.
[8] Clinical Studies in Syphilis, 1904, p. 149.
[9] In Martindale and Westcott's "Salvarsan," p. 56.

intravenous injection, and he remarks that "the intravenous injection of '606,' if adopted to any considerable extent, will certainly be followed by a number of deaths directly the result of such injections."

It may be remarked that fatal results have also occurred in connexion with mercurial treatment, but these have mostly followed the injection of insoluble preparations, especially grey oil. The danger of insoluble preparations applies equally to mercury and arsenic; a deposit of the drug in the tissues may suddenly give rise to intense and uncontrollable intoxication. Here it is the method which is at fault, not the drug. There are other ways of giving mercury which are free from such dangers.

Among other untoward effects of arsenobenzol may be mentioned necrosis of the tissues after intramuscular injections, and irritation of the kidneys (Gottheil). It is said that arsenobenzol is free from the danger of causing optic atrophy, a disaster which led to the abandonment of atoxyl and arsacetin; but it is difficult to be satisfied that no such danger exists, especially in subjects who are susceptible to arsenic. In fact, according to Isaac,[10] two cases of blindness have been reported.

To sum up, when we take into consideration the failures and limitations of arsenobenzol, the possible dangers and disasters which may follow its use, and the elaborate precautions necessary for its preparation and administration, it appears evident that if mercury is ever to be supplanted by another drug, arsenical or other, it is not by arsenobenzol, at any rate in its present form. It would have been better both for the profession and the public if some of the workers in this field had been a little more level-headed and a little less precipitate. Hata himself is more reserved and limits himself to the statement that, if not capable of effecting a clinical cure, "606" may ultimately lead to the discovery of a specific treatment for spirochætal diseases.[11]

Conclusions.

1. In the present state of our knowledge there is no drug which can replace mercury in the treatment of syphilis.
2. Although arsenobenzol causes rapid healing of certain syphilitic lesions, this effect is not constant and is often only temporary.
3. There is no proof that an abortive cure of syphilis can be realised by this drug.
4. If arsenobenzol is indicated at all in the treatment of syphilis, it is chiefly in those cases which are not influenced by mercury, but such cases are rare. Moreover, some cases resist the action of both drugs.
5. The administration of arsenobenzol is attended with many risks and dangers.

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CONTRIBUTIONS TO THE PHYSIOLOGY AND PATHOLOGY OF THE ASSIMILATION OF ALBUMIN.

BY S. A. ARANY, M.D.

The Physiology of the Assimilation of Albumin.

IN spite of various experiments on animals and *in vitro* the physiology of the assimilation of albumin is far from established, and our knowledge of the same only consists of theories founded upon these experiments. The majority of the authors suppose that the albumin of the ingested food, after having been rendered more accessible to the action of the ferments—i.e., the pepsin and trypsin—by the disintegrating action of the hydrochloric acid of the gastric juice, is decomposed into peptones, and the latter, through the united action of the trypsin and the enterokinase, into amino-acids. Although the components of the albumin just mentioned have been traced in the organs and the urine, several authors do not admit that the albumin is decomposed as far as into amino-acids, and claim that also larger (coarser) components may be assimilated by the system. Whatever the steps of decomposition may be, it is generally believed that the components of the albumin are united into so-called neutral albumin in the intestinal wall, and the former is conveyed by the blood to the various organs which transform it into tissue albumin. It is also supposed that the cells only avail themselves of such components of the neutral albumin as they need for their building up, the remaining components being excreted as urea, uric acid, &c., with the urine.

If, however, we compare the nitrogen of the albumin ingested with that which is excreted we find that both amounts are equal, from which fact it might be concluded that the albumin ingested only serves the purpose of replacing the tissue albumin decomposed by the system—viz., the cells can only assimilate such amount of albumin as corresponds to the amount of bodily albumin disintegrated by the cells. According to this view, the system is not able to assimilate albumin ingested in excess, and the excess ingested is only decomposed and excreted by the system. This is, however, as Abderhalden[1] rightly remarks, a gratuitous assertion, as we have no right to consider the nitrogenous substances only in estimating the amount of albumin assimilated by the system, but we are compelled to take also the other constituents of the albumin into consideration.

That the amount of eliminated nitrogen cannot be taken as a criterion in judging the amount of albumin assimilated by the system, I think is proved by the fact that in cases of grave diabetes the amount of the eliminated nitrogen is fairly normal, and still we find that the assimilation of albumin is greatly impaired. We find, namely, that in spite of the total restriction of carbohydrates and fat the urine contains, besides a normal or almost normal amount of nitrogenous substances, a large amount of glucose, which latter undoubtedly originates from the albumin ingested. It is not doubted by any physiologist that glucose is derivable from albumin, but how this process is performed is not established as yet.

However, even if we do admit that the elimination of glucose with the urine on a purely albuminous diet is a pathological symptom, we need not run away with the idea that the formation of sugar from albuminous matter is a pathological process. On the contrary, we are entitled to conclude that a certain part of the ingested albumin is, or rather that certain constituents of it are, also under normal conditions turned into glucose which the system either uses as energy or stores up as glycogen. There is nothing to prevent us from supposing that certain constituents of the albumin are converted into glucose which becomes united with the nitrogenous constituents of the albumin into neutral albumin; there is also no doubt that albumin if ingested in excess is not entirely eliminated from the system, as under normal conditions only the nitrogenous constituents are traceable in the urine, in the latter being no trace of sugar, which makes it evident that the carbohydrate constituent of the excess has been retained—i.e., either utilised or stored up by the system. The normal process of the assimilation of albumin is, therefore, likely to occur in the following way.

After the hydrochloric acid has loosened the structure of the albumin it is converted by the pepsin into its derivatives, the peptones, which latter are decomposed into their smaller constituents by the ferments of the pancreas and intestinal juice. The majority of authors presume that in this latter process only the trypsin of the pancreas and the erepsin of the intestinal juice take part, by the action of which the peptones are decomposed into amino-acids. In favour of this supposition there are only the experiments performed *in vitro* with albumin and above-mentioned ferments, resulting in amino-acids having been found as final products. This, however, cannot be looked upon as an unmistakable proof that the assimilation of albumin in the system takes the same course, and does not exclude the possibility that besides the fermentative processes mentioned some other processes may take place as well, by which some constituents of the albumin are converted into glucose. The ferment necessary for this process may be provided by the pancreas, and intermediary products of albumin into carbohydrates are also to be found in the system, as it cannot be denied that glucosamine is a representative of such intermediary products. Thus, aminohexose, the chemical composition of which differs very little from that of glucose, as only one molecule of OH is replaced in it by a molecule of NH_2, is to be considered as an amino-sugar, and is very likely only a representative of a great class of

[10] Berliner Klinische Wochenschrift, August 15th, 1910.
[11] Ehrlich und Hata: Die Experimentelle Chemotherapie der Spirillosen, 1910.

[1] E. Abderhalden: Lehrbuch der Physiologischen Chemie.

nitrogenous carbohydrates, which, so far, have not been isolated. That nitrogenous carbohydrates can be converted into non-nitrogenous ones is evidenced by Langstein's[2] experiments, that author having succeeded in obtaining from serum-globulin, glucosamine as well as glucose.

It is perhaps Pavy's[3] greatest achievement that he first called attention to the fact that almost every kind of albumin contains a carbohydrate constituent, and he succeeded in obtaining carbohydrate from protein by the breaking-down action of both potash and sulphuric acid, the product in the former case presenting itself in the amylose form and in the latter as sugar. Pavy also investigated the various kinds of albumin, and found that the albumin and vitellin of the egg, the proteins of the blood serum and the fibrin, as well as the gluten of wheat and the protein of the haricot bean, contain a considerable amount, whereas casein contains an insignificant amount of carbohydrates. Pavy concludes from his investigations that the presence of carbohydrates in the albumin is due to the circumstance that sugar as such cannot reach the circulation, but it has to undergo some changes previously to its entering the blood. This change takes place, according to Pavy, at the seat of absorption—i.e., in the mucous membrane of the intestine, where there is an active growth of lymphocytes carried on in concurrence with the absorption of the products of digestion. The lymphocytes take to themselves molecules of suitable configuration for being linked on to them, and thus also the sugar molecules become built into a newly formed chemical complex, which is then carried into the circulatory system.

As I have already pointed out in my article on the Assimilation of Carbohydrates in Health and Disease,[4] Pavy's theory does not suffice to account for the assimilation of all the carbohydrates ingested, because we know on the one hand, that the amount of glycogen contained by the system is about 300 grammes, which would only account for a very small part of the carbohydrates ingested; on the other hand, albumins contain, even in the case of all of their constituents not being known, much too little carbohydrate to account for the large amount of carbohydrate assimilated by the system; and it seems more likely, as I pointed out in my above-mentioned article, that that part of the carbohydrate which is not turned into glycogen is converted into fat. Although we cannot accept Pavy's theory in the sense suggested by him, it will give us some useful information regarding the assimilation of albumin. As mentioned before, the ingested albumin is decomposed into its constituents by means of ferments, and it is very likely that this process is performed by the pepsin, trypsin, and erepsin, as well as by means of some diastatic ferment, most likely supplied by the pancreas, which diastatic ferment converts the nitrogenous carbohydrates into glucose. The constituents of the albumin are united into neutral albumin in the intestinal wall, wherefrom this latter product is conveyed by the blood to the various organs in order to be transformed into tissue albumin. It is obvious that this latter process cannot be uniform, as the tissues of the various organs are different, and therefore the cells only avail themselves of such constituents of the neutral albumin as they may be in need of; and thus those cells the albumin of which contains a larger amount of carbohydrates will most certainly avail themselves of the whole amount of carbohydrates contained by the neutral albumin, whereas the cells containing a smaller amount of carbohydrates will utilise only a part of this substance, the remainder being stored up as glycogen.

Besides the glucosamine there are the carbohydrates contained by the nucleo-proteins at the disposition of the system, as it is a well-known fact that these compound albumins contain, besides albumin and nucleinic acid, some carbohydrates belonging to the pentose group. These carbohydrates were first isolated from the nucleo-proteins of the pancreas and were described by Neuberg[5] as xylose. It is obvious that the nucleo-proteins are decomposed into their constituents in the same way as the other albumins, after which process the constituents are united into neutral albumin and conveyed to the organs in order to be assimilated into bodily nucleo-proteins.

Should the albumin ingested contain an insufficient amount of carbohydrates the constituents of the decomposed albumin will have to be supplemented by the carbohydrates ingested, in which case the synthesis described by Pavy may take place, but as long as the ingested albumin contains all the constituents of which the neutral albumin is to be formed the system will not be required to draw from the carbohydrates ingested. It follows, therefore, that the ingested albumin is decomposed into its nitrogenous constituents—i.e., the amino-acids—as well as into its carbohydrate components, and both kinds of constituents are united into neutral albumin by the action of the intestinal wall. The neutral albumin, which is to be considered the parent substance of the tissue albumin, is conveyed by the blood to the cells of the various organs, which transform it into their respective tissues. The circumstance that the amount of nitrogen ingested corresponds to the amount of nitrogen eliminated led to the belief that the system can only utilise such amount of the albumin ingested as corresponds to the amount of tissue albumin disintegrated. This may be correct as far as the nitrogenous substances of the albumin are concerned, but does not apply to the carbohydrate component of the albumin, as this latter is utilised in the same way as the carbohydrates ingested—i.e., as energy and reserve material. It is also likely that the reserve material thus formed is utilised in case the albumin ingested contains too little carbohydrate components. The formation of glucose from albuminous matter is, therefore, to be looked upon as a physiological process, but it must be borne in mind that the sugar thus formed is only a transitory product which *in statu nascendi* becomes combined with the nitrogenous constituents of the albumin into neutral albumin.

Pathological Conditions.

Under pathological conditions—i.e., in the grave and very grave forms of diabetes—we find that even on a purely albuminous diet glucose appears in the urine, from which we may conclude that the assimilation of albuminous matter is impaired. If we consider in such cases the nitrogenous final products of the albumin in the urine, we find them to be either normal or very little different from normal, from which we may conclude that the assimilation of the nitrogenous portion of the albumin is not interfered with, whereas the utilisation of the carbohydrate portion of the albumin is not effected in the usual way. The deviation from the normal process taking place in diabetes could be ascribed to the circumstance that the glucose formed from the albumin is not being combined with the nitrogenous constituents into neutral albumin. This process is under normal conditions very probably effected by means of some ferment, which is either insufficiently or not at all present in diabetes, owing to which glucose is liberated and eliminated by the urine.

It may also be supposed, however, that the formation of neutral albumin takes its normal course in diabetes, and that the former, after having been conveyed to the cells and decomposed by them, cannot be converted into tissue albumin, owing to the lack of a ferment, which under normal conditions unites the glucose and the amino-acids into tissue albumin. In this case we have to deal with an impaired activity of the cells, preventing the amino-acids from being combined with the glucose, which latter thus liberated makes its appearance in the urine. The diabetic system can either partly or totally lose its ability to combine the constituents of the decomposed albumin into neutral and tissue albumin respectively. The former—i.e., the partial loss of this ability—is observed in cases of medium gravity, which very often are only due to an excessive ingestion of albumin, and easily improve by the reduction of the latter. In these cases the cells of the intestinal wall or other bodily cells have very likely too little ferment at their disposal, and therefore cannot combine all the glucose and amino-acids into neutral and tissue albumin respectively, which circumstance gives rise to glycosuria. However, if we reduce the amount of albumin ingested the constituents will have plenty of ferment at their disposal to perform the physiological process and the glycosuria will disappear. In very grave cases of diabetes there is either very little or no ferment present, as the reduction of the albumin ingested has no appreciable effect upon the glycosuria, and it is very likely

[2] Langstein: Die Kohlenhydrate des Serumglobulins, Sitzungsber. der Wiener Akademie.

[3] Pavy: The Physiology of the Carbohydrates.

[4] S. A. Arany: The Medical Press, March, 1910; Zeitschrift für Physikalische und Diätetische Therapie, 1910.

[5] Carl Neuberg: Die Konstitution des Pankreas-proteid, Berichte der Deutschen Chemischen Gesellschaft, 1902.

that at this stage of the disease all the sugar derived from the albumin ingested escapes assimilation and appears in the urine. The nitrogenous constituents of the albumin endeavour, however, to find some compensation for the loss thus sustained, and have recourse to the tissue albumin in order to extract the glucose of the latter. This endeavour, which may be looked upon as "tissue hunger," entails a considerable breaking down of body tissues and involves the patient in the greatest danger.

Acidosis.

The breaking down of body tissues does not only bring about impoverishment of tissues, but also acidosis, which is caused by the abnormal or rather perverse decomposition of body tissues, which process gives rise to the formation of acetone bodies.

Some authors claim that the acetone bodies do not originate from albumin. Magnus-Levy[6] found in a case of diabetic coma 342 grammes of acetone bodies in the urine in the course of three days, although only 311 grammes could have been formed of the albumin decomposed in that space of time, and therefore he thinks that the source of acetone bodies is fat. This, however, cannot be accepted as proof that the acetone bodies do not originate from albumin, as first of all it must be remembered that the acetone bodies are formed by the breaking down of body tissues and not by the decomposition of the albumin ingested; and, on the other hand, it has not been proved that the albumin must be decomposed into its usual final products for the purpose of yielding acetone bodies.

It cannot be denied, however, that fat may be the source of acetone bodies, as many experiments have shown that the administration of fat, and especially of butter, increases the acidosis in grave cases of diabetes; and it is very likely that the breaking down of body tissues involves, besides the albumin, the fat as well. It is also likely that by the breaking down of fat not only acetone bodies but also glucose is formed, for the reverse process occurs under normal conditions, and the diabetic system, as I pointed out elsewhere,[7] destroys where the normal system builds up.

Although it may also be concluded from various processes of assimilation that all the energy liberated in the animal system is due to the carbohydrates, and only these can be looked upon as the source of energy, it is the grave form of diabetes which best proves the correctness of this supposition. We know that in the mild or alimentary form of diabetes a certain part of the carbohydrates ingested is utilised by the system, but with the increasing intensity of the disease the system loses even this reduced tolerance of carbohydrates, and tries to make good the deficiency by using some of the carbohydrates of the albumin as energy, in which it succeeds only for a certain length of time, as the system sooner or later gets deprived of the ability of combining the constituents of the decomposed albumin, which gives rise to the escaping of glucose. Thus the system is deprived, not only of energy, but also of a very important constituent needed for its building-up process, and, therefore, in order to satisfy its want, disintegrates its own tissues.

The majority of authors suppose that the formation of sugar from albumin is effected by a very complicated synthesis, as the amount of carbohydrates contained by the albumin is, according to these authors, too small to account for the large quantities of glucose eliminated in the grave form of diabetes. But the amount of the carbohydrates in albumin is usually judged by the amount of glucosamine contained in it—a judgment to which we are not entitled, for the circumstance that so far only this aminohexose has been isolated from albumin does not necessarily prove that there are no other carbohydrates present in it. Besides, it must be borne in mind that the nucleo-proteins also contain a carbohydrate constituent, and even if this latter belongs to the pentose group, it is very likely that it is converted by the system into glucose, as Lindemann and May[8] produced glycosuria of several days' duration in a diabetic patient who had been free from sugar for a certain length of time by the administration of pentose. It is therefore unnecessary to presume a complicated synthesis of sugar from albumin in diabetes, as we have seen that almost every kind of albuminous matter contains a carbohydrate constituent, and therefore it is far more reasonable to suppose that the formation of glucose from albumin is effected by decomposition and not by synthesis.

The large amount of glucose eliminated in the grave form of diabetes is, however, not only derived from the albumin ingested, as mentioned above, but fat must also be considered a possible source of glucose, and there is no doubt that the breaking down of body tissues also contributes towards the increase of the amount of glucose eliminated by the diabetic.

Diabetes has, therefore, to be considered as a progressive malady of assimilation in general, conditioned by the loss of assimilation of the carbohydrates. The latter ensures with the increasing intensity of the disease the degeneration of all the processes of assimilation, as the system endeavours to convert all the foodstuffs ingested into glucose, which latter it can neither use as energy nor lock up as body tissues, whereby both loss of energy and impoverishment of body tissues take place. The impoverishment of body tissues becomes increased by the circumstance that the system finally avails itself of its own tissues in order to accomplish its perverse processes of assimilation, thus further disturbing the balance of assimilation.

The assimilation of carbohydrates must, therefore, be considered the nucleus of all assimilative processes, for the latter, as we have seen, entirely depend on the former. If there is nothing to interfere with the assimilation of carbohydrates, the system will not only be the recipient of all the energy necessary for its vital functions, but will also be in a position to store up a part of the assimilated carbohydrates as glycogen and fat. The normal assimilation of carbohydrates, however, also affects the assimilation of albumin, the former being looked upon as albumin sparing, owing to which quality a smaller amount of bodily albumin gets decomposed, and therefore, also, a smaller amount of the albumin ingested will have to be used for the building-up process, and the excess of the ingested albumin may become transformed into reserve material.

On the other hand, if there is something wrong in the assimilation of carbohydrates, the albumin ingested will have to replace the vital functions of the carbohydrates, in which case the system will be deprived of the albumin-sparing quality of the carbohydrates, but it will not be entirely deprived of energy, as the albumin ingested replaces the carbohydrates to a certain extent. With the increasing intensity of the disease the system loses the ability to use the glucose derived from albumin as energy or to lock it up as body tissues, and in the end has recourse to its own tissues. Although diabetes shows us what an important part the carbohydrates take in the processes of assimilation, it does not give us any evidence of the normal process of assimilation of the carbohydrates, and all we know of the latter is only based upon more or less likely theories. I described my own views of the assimilation of the carbohydrates in my work, which I have already mentioned, and since that also on other occasions,[9] and shall only allude to the matter as far as the explanation of the present subject may require it.

We know that the system contains about 300 grammes of glycogen, which accounts only for a very small part of the carbohydrates ingested, and therefore the question arises, What becomes of the greater part of the carbohydrates not converted into glycogen? The experiment with Eck's fistula has shown us that the ingestion of sugar as such causes glycosuria, whereas the ingestion of amylaceous food does not give rise to glycosuria in animals whose liver is cut out of the circuit, which fact leads me to the conclusion that the sugar ingested as such is differently utilised from the sugar derived from starchy food, the former being conveyed to the liver in order to be converted into glycogen, whereas the latter must be converted into some other material, as we have seen in the above experiment that only the assimilation of sugar ingested was interfered with.

If we take into consideration that animals whose food principally consists of carbohydrates have got the largest panniculus, it appears to be obvious that the part of the carbohydrates which is not converted into glycogen is

[6] Magnus-Levy in von Noorden's Handbuch der Stoffwechselkrankheiten.

[7] S. A. Arany: Loc. cit.

[8] Lindemann and May: Verwertung von Ramnose, Deutsches Archiv für Medizin, 1896.

[9] S. A. Arany: Beiträge zur Physiologie und Pathologie des Stoffwechs. der Kohlenhydr.; Zeitschrift für Physikalische und Diätetische Therapie, 1910; and La Doctrine de la Physiologie et Pathologie des Carbohydrates, Progrès Medical.

converted into fat. That carbohydrates can be converted into fat is evidenced by the fact that unripe linseed[10] contains a great deal of carbohydrate and no oil, whereas after coming to maturity the seed shows just the reverse proportions—viz., it contains no carbohydrate and a great deal of oil. It is therefore more than likely that an analogous process occurs in the case of the assimilation of starchy food, and this process must evidently occur in the intestine, as is evidenced by the experiment with Eck's fistula, in which the ingestion of amylaceous food was not followed by glycosuria, which admits the conclusion that the sugar must have been transformed somewhere before it entered the blood—viz., in the intestine.

It is impossible to state how the conversion of starch into fat is effected and what chemical changes the starch undergoes until its conversion into fat, as we do not yet know the intermediary products of the latter. However, it seems to me very likely that this process is being performed by the coöperation of the pancreas and the intestine, a similar coöperation being claimed for the assimilation of albumin, in which process the trypsin is supplemented in its action by the intestinal juice—viz., by one of its ingredients named enterokinase. We also know that the intestinal juice obtains some substances from the bacteria of the intestines, which substances may activate certain enzymes or may independently perform some assimilative functions. Such coöperation of the intestinal flora may take place in the conversion of the components of starch into fat, which process may be looked upon as a symbiosis—i.e., a joint action of the intestinal flora and the intestinal cells.

It is a well-known fact that under favourable circumstances certain bacteria produce some substances which are useful to the system; should, however, the circumstances change and become unfavourable to the bacteria the latter will not only not produce the useful substance, but will attain the ability to produce substances detrimental to the system—i.e., toxins. It is also known that in the grave form of diabetes even the total restriction of carbohydrates and the administration of a diet consisting of albumin and fat do not prevent the glycosuria, and it is, therefore, very likely that the vital conditions of the bacteria supplying the substance necessary for the conversion of sugar into fat have become unfavourable, and therefore the bacteria, instead of producing the substance necessary for the physiological process, produce a toxin possessing the ability to convert the fat ingested into sugar. Should this toxin attain a greater virulence it will very likely possess the ability to interfere with the activity of ferments, and thus it may also interfere with the ferment combining the decomposed albumin into neutral and tissue albumin respectively, by which interference the carbohydrate component of the albumin gets liberated and escapes with the urine. At the height of its virulence the toxin gives rise to breaking down of body tissues, which not only causes glycosuria but also the appearance of organic acids in the blood, which latter are due to the abnormal—i.e., perverse—decomposition of body tissues. In the formation of these acids also the fat participates, but I should leave it undecided whether the toxic symptoms in diabetic coma are only due to the presence of the acetone bodies, or are caused by the toxin itself.

Having now arrived at the end of our reflections with regard to the physiological and pathological processes of assimilation of albumin, I think that the only fault to be found with them is their hypothetical basis, as in the chain of deduction of the various assimilative processes depending one on another there is no link missing, which circumstance in itself speaks also for the correctness of the hypothesis.

In conclusion, it may be added that since certain ferments, or at least their actions, are known, some assimilative processes are performable also outside of the system, and there can be no doubt that other processes of assimilation are dependent upon the presence, or rather upon the activity of bacteria, as is proved by Schottelius's experience, who found that chickens put upon sterilised food did not develop and soon succumbed, whereas if bacteria were added to their food they soon recovered and prospered. Another striking proof of the action of bacteria upon the assimilation is afforded by the researches of Ellenberger, who discovered that boiled or filtered intestinal juice of the horse lost its ability of dissolving cellulose.

The physiologist as well as the pathologist has therefore, in order to establish the normal and pathological processes of assimilation, to work in the same direction, this being the careful study of the bacteria living in the system, by the knowledge of which not only physiology and pathology but also therapy will be put on the right track.

Carlsbad.

[10] Abderhalden Physiologische Chemie.

A CASE OF SO-CALLED "INSUSCEPTIBILITY TO VACCINATION."

BY J. D. STAPLE, M.R.C.S. ENG.,
PUBLIC VACCINATOR FOR THE ASHLEY DISTRICT, BRISTOL UNION.

I WAS recently asked to vaccinate a boy aged 4½ years. The father informed me that when an infant the child had been vaccinated three times unsuccessfully, the operation being performed on each occasion in one mark. He added that a certificate of insusceptibility to vaccination had been sent to the vaccination officer. The man further said that he had recently "been studying vaccination," and having his doubts as to the efficacy of "one-mark vaccination," was anxious to have the child vaccinated again. I vaccinated the child, and on inspection the result was satisfactory. The vaccination officer corroborated the statement as to having received the certificate of insusceptibility to vaccination.

In Bristol during 1909 and 1910 the successful number of primary vaccinations was about 9000; of this number more than half were performed by the public vaccinators. Twenty-six cases of insusceptibility to vaccination were notified during the two years, but none of these were reported by public vaccinators.

It is perfectly obvious that if a child is vaccinated in only one mark there is less likelihood of the operation being successful than if it were performed in the orthodox number of places. It is to be regretted that when a certificate of insusceptibility is filled up the practitioner is not required to certify that the child has been unsuccessfully vaccinated in three or four marks on three separate occasions; we should then have a perceptible decrease in the number of insusceptible cases.

It is a very unsatisfactory state of things that a one-mark vaccination can be called a successful vaccination. All the authorities on vaccination strongly condemn such a practice, and yet there are a few practitioners in large cities who vaccinate a very large number of infants in one mark, parents even bringing their children from outlying country districts to them for the purpose. It is perhaps too optimistic to hope that for the present, at any rate, there will be the slightest improvement in the vaccination laws. Vaccination is rapidly diminishing, conscientious objection certificates are most readily obtained (in Gloucester they nearly double the number of vaccinations), and if the parents should be summoned the magistrates generally inflict a fine of 1s., and parents who prefer a modified form of vaccination can generally find a practitioner who, for "a minimum fee," will perform a small "one-mark vaccination."

Bristol.

THE FINANCIAL POSITION OF THE TIVERTON INFIRMARY AND DISPENSARY. — The committee of the Tiverton (Devon) Infirmary and Dispensary in its annual report for 1910 states that an adverse balance of £252 exists against the institution. The committee adds that unless the income is increased the infirmary must be used for accidents only. The existing dispensary would still be continued. A commissioner recently inquired into the endowed charities of Tiverton, and it was proposed that some of the funds derived from these sources might be given as annual donations to the infirmary. The Tiverton Infirmary was founded in 1868 and contains 23 beds. Subscriptions have been received in consequence of this appeal, and it is hoped that a sum of money will shortly be subscribed sufficient to place the charity in a sound financial position, so that the committee will have no necessity for curtailing the useful work of the institution.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Malignant Stricture of the Œsophagus.

A MEETING of this society was held on Feb. 13th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. G. WILLIAM HILL demonstrated on patients the treatment of Malignant Stricture of the Œsophagus, with special reference to the employment of intubation and of radium. He said that the treatment of primary gullet cancer was practically nearly always merely palliative for the relief of dysphagia and pain. The only cases in which operation had hitherto been successful were in all probability not instances of primary disease in the œsophagus, but of invasion, cancer from the pharynx, and in these instances Solis Cohen's and Gluck's types of operation—viz., total laryngectomy, together with partial excision of the deep pharynx and of a small segment of the adjacent cervical œsophagus—had often been successful. Œsophagectomy alone, whether of the cervical œsophagus as first practised by Czerny, or of the thoracic, or of the abdomino-thoracic œsophagus by thoracicotomy after the methods of Sauerbruch, von Hacker, W. Meyer, and others, had no permanent or even temporary cure to its credit. With early recognition by means of the more general adoption of exact endoscopic methods of diagnosis, together with improvements in operative technique, an occasional successful œsophagectomy might be regarded as a matter of time, but that time was not yet. Killian had claimed to have diagnosed and successfully removed a small sarcoma of the gullet by endo-œsophageal measures through the œsophagoscope, but it would probably be long before another such cure was recorded. The only external operative treatment which had been, and was still, extensively practised was the strictly palliative operation of gastrostomy, but Dr. Hill thought he would be able to show that the endo-œsophageal palliative measures mentioned in the title of his paper—viz., intubation and radium—would in the near future render the necessity of the resorting to gastrostomy a much more exceptional event than it was to-day. Before dealing in detail with these special procedures with radium and intubation he passed under rapid review such palliative measures as treatment by drugs—e.g., iodides, iodipin, fibrolysin, which, like serum therapy, were not often even of temporary value. Of drugs acting locally spirit of ether broke up frothy mucus in the gullet by reducing surface tension; astringents, like adrenalin, cocaine, and turpentine, were of little use; local anodynes, like morphia, chloretone, and orthoform, were sometimes useful for pain in cancer high up; they rarely, however, enabled one to dispense with hypodermic injections of morphia, atropine, &c., in very painful cases. Lavage of the gullet in cases of dilatation above a stricture was the best means of removing decomposing substances, but glycerine of boric acid and of carbolic acid, sanitas, and similar preparations were also useful as disinfectants and deodorants. Peroxide of hydrogen was contra-indicated. Caustics were generally inadvisable, even when applied endoscopically to tight strictures; and electrolysis, ionisation, and carbon-dioxide snow had not as yet had any extensive trial. Relief of dysphagia by the X rays had been claimed in a few instances where the disease was high up. The question of diet was of great importance, but time did not admit of its proper discussion on this occasion. Blind bougieing undoubtedly gave relief to dysphagia, but was not free from danger even in expert hands, and should be abandoned in favour of endoscopic bougieing which was a much safer and more efficient procedure in every way; but with intubation periodical bougieing was unnecessary. The permanent retention of a small gum elastic oro-œsophageal catheter or feeding tube had been advocated by Krishaber at the International Medical Congress in London in 1881. Mackenzie was the first to use an entirely intra-œsophageal permanent intubation-tube of gum elastic held in position by strings. This was later superseded by Symonds's gum elastic intra-œsophageal funnel, an appliance of great utility which could, by the aid of the œsophagoscope, be much more easily inserted than formerly. When the stricture could not be sufficiently dilated by endoscopic graduated bougies or when it was near either end of the gullet, Symonds's funnels were impracticable. James Berry was the first to employ permanent soft red rubber oro-œsophageal tubes of small calibre, which were, however, difficult of introduction. Symonds improved on Berry's method by introducing a red rubber oro-œsophageal catheter shaped like a Jacques urethral catheter, which was more easily introduced by a whalebone guide inserted into the eye near the distal extremity. This method had proved most useful in his (Dr. Hill's) hands, but the pliant tube was liable either to be vomited or coughed up, and could only be reintroduced by one skilled in its use without the aid of the œsophagoscope. Dr. Hill had therefore been led to devise a styletted red rubber oro-œsophageal catheter for either permanent or temporary retention, which by reason of its having a backbone of soft silver or of whalebone fastened to the teeth was not easily ejected by the severest coughing or vomiting. Patients could be fed with liquids through the tube, and after this intubation apparatus had been worn a week or two the dilating bougie effect often enabled the patient to swallow fluids, soft food, and often some solids by the side of the tube. Although in advanced cases the styletted tube had to be retained *in situ* permanently, in others it could be left in for a week or two until from the bougie effect the patient swallowed well by the side of the tube when it could be removed until the dysphagia again became troublesome. He had treated a large number of cases by either the permanent or the temporary wearing of this styletted oro-œsophageal intubation tube with the most gratifying results; the tube was well borne and Dr. Hill regarded gastrostomy as nearly a thing of the past in his practice. The styletted tube was not only more efficient than other intubation tubes, but it was more easily introduced than any other with or without endoscopic bougieing. Moreover, feeding entirely through an oro-œsophageal intubation tube was specially indicated for permanent use where there was a communication between the malignant gullet and the air passages, so that liquid nourishment could be poured directly into the stomach. Several *confrères* had adopted that method of treating dysphagia for stricture with complete satisfaction. It was indicated in cases which were unsuitable for the employment of Symonds's funnel. The life of the styletted tube was from five to ten weeks. Dr. Hill then spoke of the employment of radium. Impressed by the results claimed abroad by Exner, Einhorn, Goisey, and others in gullet cancer, he stated that he was the first to apply radium to the gullet in this country, and was probably the only one who had done much work on that viscus with large quantities of radium. He worked in coöperation with Dr. N. S. Finzi, who possessed 205 milligrammes of radium (costing £3300). They had treated 22 cases in all, using from 50 to 20 milligrammes on the gullet for periods varying from 12 to 28 hours on end, repeated in some instances as many as six times. They claimed four temporary cures; in six other cases there was quite remarkable improvement; in seven further cases there was substantial improvement; and in five cases only was there no improvement whatever, radium being only used once, and it was doubtful whether two of these cases (advanced ones) were not worse after the one application. The technique was explained and the subject generally was illustrated by a large number of X ray photographs and original drawings with the aid of the epidiascope; six patients were examined with the œsophagoscope, and the interior of the stomach in one instance was demonstrated by the new Hill-Herschell method of œsophago-gastroscopy, nearly everyone present being given an opportunity of seeing the region of the pylorus.

Dr. STCLAIR THOMSON gave details of the cases of two patients who had been much relieved by Dr. Hill's treatment.

Mr. L. B. RAWLING gave his reasons for preferring gastrostomy to other methods of treatment.

Mr. H. TILLEY said that when an anæsthetic was required for endoscopy of the œsophagus chloroform was better than ether.

Dr. FINZI said the dose of radium for healthy mucous membrane was 100 milligrammes for six or seven hours with a platinum shield 1½ millimetres thick, and for diseased membrane three or four times longer.

MIDLAND MEDICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held on Feb. 1st at the Medical Institute, Birmingham, Mr. W. F. HASLAM, the President, being in the chair.

Mr. GEORGE HEATON showed a girl, aged 7 years, with severe Rickets, and also radiograms of her pelvis, spine, and other bones. The girl was only 34 inches high. She had extreme lordosis of her lumbar spine, and had the gait of a patient with congenital dislocation of the hips. There was marked double coxa vara, the great trochanters being on a higher level than the iliac spine, and movements of rotation inwards and abduction of the thighs were very limited. The radiograms showed that the neck of the femur on each side was horizontal and curved with a convexity forward. The pelvis, as shown in the radiogram, was extremely oblique and of the malacosteon or triradiate variety, both acetabula being driven inwards by the weight of the body acting on the heads of the femora. Two other children of the same family were the subjects of rickets.

Mr. C. A. LEEDHAM-GREEN showed three Papillomata of the Bladder which he had successfully removed. He also showed a young girl, aged 15 years, suffering from marked Acromegaly. The patient was first noticed to be growing abnormally fast in her ninth year, and is now, although with marked dorsal curvature, 6 feet 6¾ inches in height. Her face, hands, and feet showed the characteristic changes. A radiograph taken of the skull indicated an abnormally large sella turcica, but there were no ocular symptoms pointing to intracranial pressure. The question of operative interference by removal of the pituitary body was raised, but the patient's relatives decided against it.

Mr. BERNARD J. WARD showed two cases of Trigeminal Neuralgia cured by injections of alcohol. Both were men, one aged 34 and the other 67 years, and both were examples of epileptiform neuralgia in its worst form. In each case medical treatment of various kinds had been tried for over two years but without relief, even opium failing in the one case. The attacks of pain used to come on from 20 to 30 times a day, and were started by such a slight stimulus as a cold draught or eating, so that in one case liquids only could be taken. In both cases the second division of the fifth nerve was alone affected, and this was injected at the point at which it leaves the foramen rotundum with 2 c.c. of 80 per cent. alcohol containing some eucaine in solution. The first case had had no more pain since the fourth injection six weeks ago, and the second had been free from pain since the first injection, but it was thought better to give a second to guard against recurrence. He had been completely free from pain for two months.

Dr. C. E. PURSLOW showed: 1. Fibroids of the Uterus, with Bilateral Carcinoma of the Ovaries, removed by abdominal section. 2. A Fibroid of the Broad Ligament which was firmly impacted in the true pelvis. There had been incontinence of urine from overflow for several months, and the bladder at the time of operation reached to the umbilicus, though a catheter had been passed immediately before. The uterus bisected coronally was also shown, and a similar fibroid at an early stage of growth could be seen on the opposite side. 3. A Uterus with Large Submucous Fibroid removed by abdominal hysterectomy from a patient, aged 49 years, who had suffered from severe hæmorrhages for five years, and was very anæmic at the time of operation. One fibroid had undergone myxomatous degeneration. 4. A Uterus with Corporeal and Cervical Fibroids removed by abdominal pan-hysterectomy from a patient aged 46 years. Since her last confinement, five years previously, the patient had suffered from abdominal pain, menorrhagia, and frequent micturition.

Dr. WALTER R. JORDAN showed a girl, aged 2½ years, with an Abdominal Tumour, as a case for diagnosis. For some two months the mother had noticed enlargement of the abdomen, and declared that she could see an increase in the size each week. An apparently solid tumour occupied the entire left half of the abdomen and reached well over on to the right iliac region. The tumour had an irregular rounded edge anteriorly, and was lost posteriorly under the spinal muscles. The colon could be made out crossing it. Dr. Jordan regarded the case as one of renal sarcoma. No other opinion was expressed.

Mr. W. ARTHUR LOXTON showed two cases of Tertiary Syphilis which had been treated by subcutaneous injection of salvarsan. The emulsion for one case had been prepared thus: salvarsan, 0·6 gramme; absolute alcohol, 6 c.c.; hot water, 10 c.c.; normal sodium hydrate phenol-phthalein sol. 3 c.c.; and 3 drops of acetic acid to neutralise. Pain was so severe and so prolonged in all the cases in which this formula was adopted that its employment had been abandoned. In the second case the method of preparation adopted was that described by McDonagh. The bulk of injection was small, and if the procedure was properly carried out no pain was induced.

Mr. A. W. NUTHALL showed a specimen of Sarcoma of the Left Kidney taken from a female child aged 2 years. A tumour had been noticed for five months before death, which followed on progressive emaciation and weakness. The growth appeared to take origin at the upper pole of the left kidney and to be distinct from the renal tissue, a capsule intervening, but the upper portion of the kidney was distorted and replaced by the main mass of the tumour. Extending from the hilum of the left kidney were numbers of greatly enlarged retro-peritoneal glands, overlying the spine and reaching across to the right kidney and down into the hollow of the sacrum. A peculiar and unusual condition of the mesentery was present: it was solidly enlarged by masses of glands contiguous with and inseparable from the adjacent growth in the kidney; in this way the small intestine largely, and the descending colon altogether, were in front of the tumour. The right kidney was enlarged and hydronephrotic but not involved by the new growth. The left suprarenal capsule could not be found. The right suprarenal capsule was of normal size and shape.

MEDICAL SOCIETY OF LIVERPOOL.

The Use of Tuberculin in the Treatment of Phthisis.—Local Administrative Control of Tuberculosis.

A MEETING of this society was held at the Medical Institution, Liverpool, on Feb. 9th, Dr. T. R. BRADSHAW, the President, being in the chair.

Dr. H. H. CLARKE read a paper on the Use of Tuberculin in the Treatment of Phthisis. He stated that at the Hospital for Consumption he and his colleagues had given a great deal of attention to this method of treatment and had published their results in various journals. He gave a short account of the plan of treatment he adopted; when dealing with patients who were inside the hospital he gave a course for 42 days, starting with 1-5000th c.c. of the original solution of the bacillary emulsion as prepared by Meister Lucius and Brüning. For the first ten days the dose was doubled each day, thus 4-50th c.c. was soon reached; this was again doubled on the twelfth, twentieth, thirtieth, and forty-second days. If the patient had to be treated in the out-patient department he gave a weekly dose of 1-500th c.c. He considered that the oral method was as useful as the hypodermic method of administration. He concluded that tuberculin was of use in the treatment of phthisis.

Dr. E. W. HOPE then read a paper on the Local Administrative Control of Tuberculosis. He pointed out the great difficulties which had in the past confronted the early attempts to deal with the prevention of tuberculosis due to the neglect in by-gone years of sanitary principles and to the large amount of unskilled and casual labour which had existed in Liverpool. He emphasised the view that efficient methods must begin at the control of the recognised disposing causes of tuberculosis, and showed by charts how the adoption of these methods had in Liverpool been crowned with success. When insanitary areas were first condemned the mortality from phthisis was 4 per 1000; in the last two years it had fallen to 1·9 per 1000. Dr. Hope exhibited models of the new and the old workmen's dwellings. Speaking of sanatoriums, he said that these must fail as great preventive means, whilst they had other uses. He gave an account of the sources of information at the disposal of the health authorities for the recognition and subsequent amelioration of tuberculosis, and considered that the various authorities now engaged in this work could with advantage be unified. He advocated as wise and economical the support of the dependents whilst the bread-winner was undergoing treatment, and considered that

accommodation for advanced cases and possibly the compulsory detention of dangerous cases were required. He estimated that the disappearance of phthisis would mean a saving to the nation of one-eleventh part of the total cost of pauperism—i.e., of £1,000,000 per annum. There was compulsory notification in the case of pauper consumptives, and he thought that this rule should be extended to all those who sought relief in any medical charity. Voluntary notification had worked well in Liverpool. Notwithstanding that the population of Liverpool had increased 115,000 from 1895 to 1910, the total number of deaths last year from phthisis was 3056 less than in 1895. Dr. Hope then gave an account of the German system of insurance for sickness, which he praised and said it deserved earnest attention.—Dr. W. PERMEWAN said that the radical cause of consumption was to be found in the housing condition of the people, and he paid a high tribute to the work that Dr. Hope had done in connexion with this problem. In view of the great prevalence of tuberculosis amongst barmen Dr. Permewan urged the necessity of the power of inspection by the health authorities. This they had not at present. The lighting and ventilation of public-houses were very often deficient.—Dr. NATHAN RAW favoured the prospect of unification of the authorities dealing with tuberculosis. He said that at the present time there were about 800 persons with phthisis mostly in an advanced stage under the care of the Poor-law and thus isolated. He was in favour of compulsory removal and detention of advanced cases. He looked forward to the time when the whole problem of the control of tuberculosis would be undertaken by the health authorities in each district.—Dr. J. J. BUCHAN, medical officer of health of St. Helens, urged the necessity of compulsory notification.—Dr. C. W. P. MOFFATT of Bolton said that in that town the poor people were recognising the infectivity of tuberculosis, and were compelling members of households suspected of suffering from that disease to attend the medical charities.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Medical Inspection of Schools and Scholars

A MEETING of this section was held on Feb. 3rd, Professor E. J. MCWEENEY, the President, being in the chair.

Mr. J. B. STORY read a paper on Medical Inspection of Schools and Scholars, in which he advocated the extension of the recent Education Act to Ireland, more especially Section 13 of the Education (Administrative Provisions) Act of 1907, which compels all the local education authorities in England and Wales to appoint medical officers to inspect all elementary school children on admission and (as ordered by the Education Board) twice subsequently before leaving school. The medical officer has also to make an annual report to the local authority on the sanitary condition of the schools in his district, and the local authority has power to provide means of treating the curable maladies of the children infected subject to the approval of the Education Board. The educational arrangements in Ireland differ so much from those in England and Wales that the Act would, he said, require considerable modification before it could be applied to Ireland; but the necessity is urgent, as could be inferred from the report of the Dublin Sanitary Association recently published in the daily press. The Act referred solely to elementary schools, but Mr. Story contended that in Ireland the intermediate schools were very nearly as much in need of medical inspection as the national schools.

The PRESIDENT thought that medical inspectors for the schools should be introduced as soon as possible. He had often remarked the extreme frequency of vermin amongst the poorer classes, which vermin, he considered, gave entrance to staphylococcal infection.

Dr. J. H. P. BOYD BARRETT said that the Irish National Board had no power to spend its money on medical inspectors. He had read the report of a recent meeting at Paris, where representatives of all countries had assembled. This report showed the tremendous benefit which such countries as Germany, France, Russia, Holland, and even Mexico had derived from medical inspection of their schools. He laid great stress upon the fact that children were compelled to attend schools, yet no precaution was taken to prevent the spread of infectious diseases amongst them.

Dr. T. DONNELLY said that children or their guardians should be instructed as to the necessity for cleanliness. Mr. Story had shown the small amount of money that was necessary for medical inspectors, and if the matter was put fairly before the public he thought there would be no difficulty in getting a small rate.

Dr. T. P. C. KIRKPATRICK said that there was criminal negligence displayed in connexion with school children. He thought that if compulsory inspection was not adopted compulsory education should be stopped.

Sir JOHN MOORE said that 11 years ago he sat on the Local Government Commission to inquire into the health of Dublin. As one of the Commissioners it was his duty to visit the primary schools in Dublin. He then had no idea that such dirt and insanitary surroundings existed in their schools. The Commission made very strong recommendations which turned out to be practically a dead-letter. The Board of National Education was wrongly constituted. There should be a fair representation of medical men on the Board. It was most unfair that they should have no provision for safeguarding the condition of the children who went to the primary schools. These primary schools were hotbeds of infection, especially whooping-cough and measles, and neither of these diseases was notifiable.

Dr. R. B. MCVITTIE said a great deal had been said about infectious diseases which caused some benefit by giving immunity from these diseases in adult life. He did not consider them so serious as heart diseases. A number of children with feeble hearts were driven to school by a compulsory Act. If their object was to be gained, it was necessary for the medical profession to agitate persistently and constantly.

Dr. M. F. COX said that if the people did not move in the matter it was because they were ignorant. In America dirty children were not allowed into a public school.

Mr. STORY then replied.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Royal Devon and Exeter Hospital on Feb. 10th, Mr. J. M. Ackland, the President, being in the chair.—Mr. C. E. W. Bell showed the following specimens: 1. Suppurating Gall-bladder, removed by operation, which formed a tumour descending well into the right lower abdomen and was greatly distended by several calculi. The patient made an excellent recovery. 2. Uterine Fibroid, partially extruded from the cervix uteri and removed per vaginam. 3. Vesical Calculus, removed by the suprapubic route from a man whose general condition made operation an anxiety, but who subsequently made a good recovery.—Mr. A. C. Roper showed specimens of: 1. Hydatidiform Mole, expelled naturally from a multipara, aged 41 years, who was admitted to hospital for severe hæmorrhage. The mass was delivered complete, a subsequent precautionary curetting by Mr. Roper revealing no further fragments. Sections by Dr. R. V. Solly showed no evidence of chorionic epithelioma. 2. Uterine Myoma (subperitoneal). The fibroid had become detached from the uterus and formed a tumour in the right lower abdomen. The woman was admitted to hospital with a history of recent peritonitis and for threatened bowel obstruction. Some difficulty was met with at operation owing to the omentum having curled itself round the tumour, which in turn lay in a bed of mesentery.—The specimens were discussed by Dr. J. D. Harris, Dr. G. P. D. Hawker, and Mr. G. E. A. Evans.—Dr. J. Shirley Steele Perkins reported a case of Renal Calculus in a woman aged 45 years. The case was remarkable for the small size of the stone and the definite diagnosis by means of a very clear skiagram, which, together with the calculus, was exhibited.—Dr. Harris and Mr. Roper discussed the case.—Mr. Roper reported two cases of Intestinal Obstruction, the first occurring in a young woman two weeks after confinement. The second case was that of a man aged 60 years. Obstruction appeared to be due to a small growth in the splenic flexure. Mr. Roper then read a paper entitled "Traumatic Neurasthenia and the Workmen's Compensation Act." He defined traumatic neurasthenia as "suspension, inhibition, or perversion of function resulting, without discoverable reason, from an accident or operation." Mr. Roper considered these cases to be rare and their extension from the leisured to the

labouring classes to be a matter deserving investigation. He illustrated his paper with notes on four cases under his personal care. Of these cases the actual injury in the first was of a very trivial nature, but vague neuralgic pain, diminution of field of vision in injured eye, flashes of light, together with restlessness and depression, followed. The man eventually compounded with his insurance company, gave way to drink, and became insane. In the second, a man, aged 30 years, received a severe cut at the junction of the cornea and sclerotic from a flake of red-hot metal. Removal of the eye was imperative, but recovery, as far as the wound was concerned, was in all ways satisfactory. This man became deeply depressed, but finally he recovered. In the third case a man, aged 43 years, had the ninth and tenth lower left ribs fractured through the backing of a cart against him. For many months there was vague neuralgic pain, at first thought to be due to exuberant callus, and a slight chiselling operation and electrical treatment gave no result. An exploratory laparotomy was then done, the symptoms suggesting the possibility of adhesions to some viscus. Nothing abnormal was detected, but the pain gradually disappeared; the man returned to work, and is now quite well. The last case was that of a man, aged 50 years, whose right eye was injured with a stick whilst he was hedge cutting. Some corneal opacity resulted, but otherwise the eye soon quieted down. Mr. Roper, in reporting his case to the insurance company, and suspecting neurasthenia would follow, advised one and a half year's total compensation to settle and get the man back to light work. The man, however, demurred, and was taken into hospital for further observation. Here he was found to have exaggerated reflexes, normal pupils, and a greatly reduced field of vision. He was advised to accept the company's offer and to return to light work. When told that worry about compensation had much to do with his symptoms, which were undoubtedly due to nerve and not to direct ocular defect, he admitted that his mind was never free, assented to a settlement, and returned to light work. Mr. Roper emphasised how frequent these cases had become since the passing of the new Act—inducing, as it did, greater introspection on the part of the labouring man than formerly and far more than was good for him. One must, however, separate this condition from that of the true malingerer. Work of some kind was undoubtedly a remedy in traumatic neurasthenia.—In the discussion which followed Mr. R. Pickard, Dr. J. Raglan Thomas, and Mr. Bell took part.—Mr. Roper replied.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. A. W. Cuff, the President, being in the chair.—Mr. R. J. Pye-Smith opened a discussion on Cases of Injury under the Workmen's Compensation Act, in Relation Specially to Diagnosis (with regard to justice of claim), Treatment (with regard to completeness of recovery), and Prognosis (with regard to resumption of work). He referred to statistics to show the large number of workpeople (over 7,000,000) affected by the Workmen's Compensation Act, the number of accidents at employment (nearly 350,000) occurring annually, and the fatalities (between 3000 and 4000). Probably less than 2 per cent. of all claims came before the county court judges for arbitration. In these cases he thought that the medical referees should be more frequently called on to act as assessors, as their presence exercised a healthy influence over the medical witnesses, and enabled the arbitrator better to appreciate such evidence and the physical condition of the injured man. The advantages of the Act, whereby the honest and industrious man received pay sufficient to keep his home together when disabled by accident, were largely counterbalanced in the case of the dishonest and lazy by such dangers as the temptation to make the most, instead of the least, of an injury, to exaggerate its effects, to abstain from proper remedial measures, to shirk work, to cheat his employer, to bring misery on his family, and to degrade his own moral nature. Mr. Pye-Smith insisted on the importance of a definite diagnosis and of making immediate written notes of negative as well as positive conditions. He discussed the persistence of pain as a cause for the prolongation of many cases resulting in honest differences of opinion between medical witnesses, the undue frequency of sepsis, the stiffness resulting from fractures and sprains, and the danger of inconsiderate suggestion. Prognosis was often particularly difficult, because the surgeon responsible for forming it usually had not control of the treatment; much also depended on the degree of honesty of the workman. Too many cases dragged on for an inordinately long period for lack of a definite idea of how long the case ought to last.—Mr. A. C. Turner pointed out that the Act was concerned with "loss of capacity for work from an accident," which was defined as "any mishap or untoward event which is not expected or designed." Whether the cause of injury was an accident or not was for the lawyers to decide, but the medical man must say if a given injury could be caused by a given accident. It was necessary to examine not only the injured part but the body generally. It was also very important to know exactly what work the man did, and to personally see such work done. The results of an accident had to be "natural and reasonable."—Dr. E. W. Adams pointed out that in cases of life assurance and private accidental injury the opinion of the medical referee was not often seriously challenged. But in cases of injury to workmen the medical man must be prepared to defend every statement of his report. He thought it would be a great help and advantage to have associated with the examiner an intelligent mechanic conversant with the particular process which the man would have to return to if certified fit. The prognosis, which was the most important factor from the insurance company's point of view, must include not merely an estimate of the time necessary for healing or recovery, but also the probable time required for the perfect functioning of the injured part.—Dr. F. J. Sadler showed a boy, aged 8 years, convalescent after Typhoid Fever complicated by "Meningitis," who had been treated by injections of killed typhoid bacilli.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 15th, Mr. W. Morley Willis, the President, being in the chair.—In opening a discussion on Syphilitic Throat and Skin Affections, Mr. J. Mackie confined his remarks chiefly to the diagnosis between syphilitic, tuberculous, and malignant disease of the throat and larynx. Chancre was rare in this region; on the other hand, it was a favourite site for secondary and tertiary manifestations of syphilis. The secondary stages did not last long and readily responded to treatment. In the tertiary stages gummata usually appeared on the posterior surface of the uvula, on the palate, and on the base of the epiglottis. The importance of the family medical attendant, who knew the history of the patient, was emphasised in the question of diagnosis. In doubtful cases iodide of potassium frequently cleared the diagnosis, and a careful examination of the chest and sputum would eliminate or prove the presence of tubercle.—Mr. J. P. W. Gray said that primary chancres were very rare in the region of the throat; they were accompanied by great enlargement of the cervical and submaxillary glands. After six weeks secondary manifestations appeared chiefly as (*a*) multiple, slightly infiltrated mucous patches on the fauces; or as (*b*) superficial ulceration of the mucous membrane accompanied with rather deeper infiltration. These symptoms were seen more commonly in women than in men, because the men, as a rule, were already under treatment and so often escaped. Five years after infective gummata might be found as tumours infiltrating the surrounding tissues. As these frequently arose behind the soft palate, they often escaped detection; moreover, they broke down with surprising swiftness, leaving a deep ragged ulcer, sometimes involving most of the uvula and one side of the pharynx. As this healed it led to serious deformities; in some cases the adhesions almost entirely shut off the post-nasal space from the pharynx. Syphilitic rhinitis in congenital disease was very amenable to treatment. The general treatment consisted in giving mercury and iodides, and in all cases ordering a mercurial lotion as well.—Dr. F. H. Jacob dealt chiefly with syphilitic skin lesions and the bacteriology of syphilis. The organism was best examined through a dark-ground condenser. Lupus was often difficult to diagnose from syphilis; the chief aids in the diagnosis were the pressure of a watch-glass which showed the apple-jelly granulations in lupus, the tuberculin test, the microscope, and the Wassermann reaction. The latter reaction had shown them that anti-syphilitic treatment should be continued for three years; also that the best methods of treatment were: (1) "606," (2) the inunction method, (3) the injection method, (4) by means of suppositories, and (5) that oral treatment was the slowest and least satisfactory. In the tertiary stages

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potassium iodide should be pushed to large doses—e.g., one drachm three times a day. Very often arsenic added to a mixture of iodide and mercury proved of great value.—Dr. C. H. Cattle, Dr. A. Stanley Green, and Dr. M. Parry-Jones continued the discussion.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at the Medical Institute, Liverpool, on Feb. 17th, Dr. J. B. Hellier (Leeds), the President, being in the chair.—Dr. H. Briggs (Liverpool) showed several Obstetrical Mannikins, which he claimed rendered the teaching of operative midwifery both easier and more satisfactory.—The President showed an Intra-mural Myoma removed from a woman, aged 25 years, in her second pregnancy. The tumour had grown with great rapidity and showed some signs of degeneration. The patient had done well and had not miscarried.—Dr. J. E. Gemmell (Liverpool) showed specimens of: (*a*) An Ovarian Abscess Simulating a Fibroid, which had been noticed during a pregnancy some seven months before the operation. In the course of separating adhesions during the operation the abscess, which appeared to be intimately connected with the uterus and as large as a five months' pregnancy, was ruptured, and so panhysterectomy was performed. It was only on subsequent dissection that the tumour was found to be ovarian in origin. (*b*) A specimen showing Multiple Fibroids of the Uterus in one of which red degeneration had taken place. The operation (sub-total hysterectomy) was undertaken on account of severe hæmorrhage.—Dr. T. B. Grimsdale (Liverpool) described a case of Persistent Metrorrhagia in a woman, aged 35 years. The patient had been curetted on two occasions, but with only very temporary relief, so after consultation the uterus and one ovary in which there was a blood cyst were removed.—Dr. W. E. Fothergill (Manchester) read a paper dealing with the proper use of the word "endometritis" in teaching gynæcology. If this could be settled, definition in the use of other words like "metritis" and "ovaritis" would naturally follow. Endometritis certainly implied the inflammatory reaction of the tissues to irritation by septic, gonorrhœal, tuberculous, and other micro-organisms. The word was, in fact, the name of a pathological process. But it was constantly used as a name for various clinical states or diseases which were not caused by infective or other irritants. Amongst the conditions often called "endometritis" were pelvic hyperæmia, hyperplasia of the endometrium, sub-involution, the menorrhagia of puberty, the menorrhagia of the menopause, and even menorrhagia secondary to various general diseases. Dr. Fothergill considered, in the first place, that the teaching of gynæcology would gain in simplicity and accuracy if the use of words ending in "itis" were confined to cases in which there was clinical evidence, in the form of history, symptoms, or signs, that infection had played a part in the causation of the condition. Further, he thought it would be of advantage if words ending in "itis" were used only for pathological processes which occur in the course of infective disease, and were not used as if they were the names of diseases with independent and separate existence.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Feb. 3rd, Mr. F. Lace, the President, being in the chair.—Dr. R. Waterhouse showed specimens of the Thymus Gland, weighing 24 grammes, removed from a child, aged 9 months, who died suddenly whilst being bathed, and the Thymus Gland of a child, aged 3 months, weighing 34 grammes, who died from asphyxia from pressure on the trachea, breathing having been embarrassed since birth; tracheotomy gave no relief.—Dr. G. J. King Martyn read a paper on the Use of the Calcium Salts. He gave a *résumé* of the known physiological effects of calcium on the tissues and blood and the evidence of the regulation of calcium metabolism by the thyroid gland. The intolerance of iodides in myxœdema was due possibly to the liberation of thyroid secretion on the cerebral circulation. He advanced the theory that sporadic goitre was due to compensatory hypertrophy of the thyroid gland to cope with added calcium metabolism induced by drinking certain limestone waters. The treatment of rheumatoid arthritis by thyroid extract was essentially the same as that by iodides. He pointed out that one of the benefits of cod-liver oil in rickets was due to its forming a soluble soap with calcium. As regards calcium increasing the coagulation of blood, clinical experience seemed to be contrary to recent experimental work. He instanced as morbid conditions in which he had found the administration of calcium beneficial: hæmophilia, epistaxis, chronic sneezing, chilblains, certain headaches, orthostatic albuminuria, and Henoch's purpura. He pointed out the relation of strontium to calcium and its success where the latter salt had failed. He ascribed the failure of calcium to produce benefit in some cases either to non-absorption or to its not being given over sufficiently prolonged periods. The question of calcium metabolism was of great interest with regard to the Bath waters. In these calcium was present only as the sulphate and carbonate and in small quantities. Hence it was probably not absorbed at all, or in such minute quantities as to do no harm. He had never seen thrombosis or other phenomenon which might be due to calcium absorption occur during the drinking of the waters. If, however, excretion of calcium in the body were desired, iodides could be taken with the mineral water. This was a valuable method of administration preventing iodism. He found the best preparations of calcium to be the lactate, the chloride, and the iodide, and mentioned a case of diplopism lasting 12 hours, and a case of "dualism" whilst taking the chloride which passed off without bad effects.—Dr. J. Lindsay read a paper entitled "Bilious Headaches," illustrating it by the case of a man, aged 51 years, in which these headaches recurred at regular intervals, commencing at the age of six.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 9th, at St. John's Hospital, Leicester-square, Dr. P. S. Abraham, the President, being in the chair.—Dr. G. Stopford Taylor (Liverpool) showed a case of Darier's Disease in a man, aged 33 years, with a general hypertrophy of the whole sebaceous system, which had commenced two and a half years ago.—The President showed a boy, aged 5 years, with Dermatitis Herpetiformis in the acute stage, in which staphylococci had been found in the bullæ.—Dr. G. Norman Meachen showed: (1) A child, 5 years of age, with Granuloma Annulare upon the right wrist of three months' duration; and (2) a case of Leukoplakia in a man, aged 83 years.—Mr. Dennis Vinrace showed a girl, aged 8 years, with Multiple Tuberculous Lesions after Varicella.—Dr. W. Knowsley Sibley gave a demonstration of the method of Hyperæmia in the Treatment of Skin Diseases, illustrated with cases.—Dr. W. Griffith showed: 1. A case of Severe Nodular Infiltration of the Thigh in a man aged 25 years. The case excited much interest, and several members expressed the opinion that the condition might be one of mycosis fungoides. 2. Erythema Multiforme in a man aged 24 years.—Dr. Morgan Dockrell showed a case of Syphilis in a young woman who had been treated by two intravenous injections of 0·4 gramme of "606," and Dr. Griffith demonstrated the apparatus used.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held in the library of the Royal Army Medical College, Millbank, on Feb. 8th.—Fleet-Surgeon R. C. Munday, R.N., of H.M.S. *Hyacinth*, East Indies Station, read a paper on Different Types of Beri-beri Occurring in Naval Ships Cruising in the Persian Gulf during 1909–1910. He said that the number of men serving in the Gulf during 1909 was more than double that of any preceding year of modern times. The service is a very arduous one; no leave or exercise can be given to the men and the supply of fresh provisions is very limited and of poor quality. The number of Asiatics serving in the ships of the Persian Gulf numbered 182 in 1909 and 317 during 1910—a very considerable increase. In 1909 19 cases of beri-beri, with 7 deaths, appeared among Asiatics, whose staple diet was white, highly polished, over-milled, uncured rice; and as the result of substituting cured rice, increasing the nitrogenous part of the diet, and instituting other precautions, dietetic and otherwise, only two cases, and those doubtful ones, occurred in 1910. This was most satisfactory, but the extraordinary part was that although no Europeans were attacked in 1909 when the epidemic among the Asiatics occurred, in 1910 there were 17 cases of beri-beri among them, while, with the exceptions before stated, the Asiatics escaped. From the clinical evidence there could be no reasonable doubt that all these 17 cases should be classed as beri-beri. All classes were affected. Uncured, over-milled rice did not form part

of their diet; indeed, in many of the cases no rice was eaten, and Fleet-Surgeon Munday advanced the opinion that when beri-beri occurred in the Asiatic rice-eater the cause lay in the poverty of his rice, which had lost by over-milling certain necessary ingredients, but that when it occurred in the European *non-rice-eater* the cause lay not in the rice (which was not his staple food), but in a deficiency of some other article of food, which, or portions of which, were vital to the proper nutrition of his nervous system; that this lack might be brought about by inability to assimilate the necessary portions, even where present in the diet, through mal-digestion, caused by inferior quality of food, nervous depression due to climate, monotony of service, lack of exercise, &c.—The paper was discussed by Fleet-Surgeon W. E. Home and Staff-Surgeon O. Rees, and the debate was wound up by the President, Sir David Bruce, who expressed a strong hope that over-milled rice would be interdicted for the future. While expecting that the work of Fraser and Stanton and other observers would hold good, he could not help thinking that the explanation they offered was almost too simple. For his own part, he thought that probably some peculiar protein body had disappeared from the over-milled rice, though what it was no one could yet tell. This protein body might be absent from the diet of Europeans, as in the case of the European outbreak described in the paper.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 9th, Mr. J. Ernest Lane, the President, being in the chair.—Mr. J. Jackson Clarke related the notes of two cases of Abscess of the Liver Complicating Appendicitis. Both patients were boys, one aged 8¾ years and the other 4 years. In both the original lesion was an easily accessible, perforated appendix with abscess. The symptoms of liver implication were obscure, there being no downward increase of liver dulness and the upward increase occurring late; the chief symptom was fever of septic type not otherwise accounted for. In both cases exploration through the ninth intercostal space revealed the pus, so that part of the ninth rib was removed. The intrahepatic situation of the abscess was established at the operation. Infection of the pleura followed operation in one case in spite of the usual precautions. Both patients recovered completely.—Dr. Frederick J. McCann read a paper on the Surgical Treatment of Sterility in Women. He said that while sterility in women resulted from both gross and minute changes in the pelvic organs, surgical treatment was applicable only to the former. No major treatment should be undertaken until impotence in the male had been excluded. One-fourth of the cases of sterility were due to this cause. In the past attention had been given chiefly to malpositions of the uterus, and the ovaries had been neglected. Gonococcal and other infections led to adhesions in the tubes and ovaries and occlusion of the tubes. He described the operation of salpingostomy and said that a large incision was desirable; all adhesions must be separated, and the uterus suspended to avoid the formation of new ones. The tubes remained patent as had been proved in subsequent operations; no probe should, however, be passed. Suitable cases were those in which there was increased menstrual loss, with or without pain preceding the period, sacral backache, and possibly dyspareunia. Such cases showed on examination partial fixation of the uterus, though occasionally it was freely moveable, with tenderness if the tubes were thickened. There appeared to be no special liability to tubal pregnancy, although he was aware of one instance after this operation. For uterine displacements he advocated hysteropexy by an open operation rather than that of Alexander-Adams. Pregnancy often followed such operations. Pessaries should not be used. Curetting had very limited indications in the treatment of this condition, only cases of "chronic glandular hypertrophic endometritis" with the uterus normally placed, free loss, and normal tubes being suitable. Division of the cervix was often valuable for sterility associated with spasmodic dysmenorrhœa.—The paper was discussed by the President, Mr. A. C. Butler-Smythe, and Dr. R. Paramore.—Dr. McCann replied.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held in the Radcliffe Infirmary on Feb. 10th, Mr. R. H. A. Whitelocke, the President, being in the chair.—Dr. A. L. Ormerod brought forward a scheme for the Voluntary Notification of Cases of Tuberculosis. He suggested that the practitioner in attendance and the patient should each sign the form of notification, and that such notification should give permission for the medical officer of health or his deputy to visit the house, examine contacts, and give general advice; that the practitioner should receive for each notification a fee of 2*s.* 6*d.*, and that each patient should only be notified once, such notification being made only after confirmation of the diagnosis by a bacteriological or physiological test. If the notification were signed by both the patient and the practitioner the responsibility of medical men became less. The reason for notification once only was obvious when it was considered that in the interests of public health each case must be kept under observation until death, and this in itself would prevent the hasty notification of doubtful cases.—Dr. W. D. Sturrock read a paper on Some Recent Work on Cancer. Having given a definition of an established cancer as a parasite rooted in its host, he outlined the broad divisions of work done on the subject. While work on metabolism was of great value, he had specially chosen for review the transplantation work done by the Cancer Research Fund workers and others. The main points brought out were that a successful transplantation needed a special reaction on the part of the connective tissue, which had to provide a stroma for the support of the growing graft, consequently the absence of such reaction made a graft powerless, and was an expression of immunity. Such immunity could be obtained experimentally and suggested the possibility of similar immunity being established towards secondary growths, which were somewhat analogous to transplanted growths. On the other hand, it appeared that too great a response of the connective tissue might strangle an established growth, and this again suggested a possible means of attack upon the primary growth itself by stimulation of the connective tissue.

Reviews and Notices of Books.

The Physiology of Reproduction. By FRANCIS H. A. MARSHALL, M.A. Cantab., D.Sc. Edin., University Lecturer in Agricultural Physiology, Cambridge. With a preface by Professor E. A. SCHÄFER, Sc.D., LL.D., F.R.S., and contributions by WILLIAM CRAMER, Ph.D., D.Sc., and JAMES LOCHHEAD, M.A., M.D., B.Sc. Edin., F.R.C.S. Edin. With 154 illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. Pp. 706. Price 21*s.* net.

IT is claimed for this work that for the first time the physiology of the organs of reproduction has been presented in a complete form, and that it furnishes a much needed introduction to eugenics. The book is addressed primarily to the trained biologist, though it is hoped that it may be of interest to medical men engaged in gynæcological practice, veterinarians, and breeders of animals. The physiology of generation in animals, more particularly in the higher forms and mammals—though invertebrates are not omitted—is specially discussed. Heredity, cytology, and variation are omitted intentionally, but a large part of the work deals with morphology. The breeding season in invertebrates and vertebrates is fully discussed, then the œstrous cycle in mammalia, and an account of the changes that occur at this season in the non-pregnant uterus, with details of histological and other changes in the ovary. Some of the figures are original, others are from Sellheim. The author is of opinion that there is no doubt regarding the essential similarity between the menstrual cycle in the primates and the œstrous cycle in the lower mammalia. A very interesting chapter is devoted to the ovary, oögenesis, growth of the follicles, ovulation, and corpora lutea. The account is very full, and confirms the views of Sobotta, that the luteal cells represent the epithelial cells of the undischarged Graafian follicles. Spermatogenesis and insemination are next dealt with, and mention is made of the process of artificial insemination, as first practised by Spallanzani. In discussing fertilisation the author is led to a study of the importance of Mendel's discovery. It forms

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a basis for a theory whereby variability can be discussed in terms of the conjugating cells themselves. He states reasons for supposing that sex is a Mendelian phenomenon, but brings forward no good evidence for the existence of what has been called telegony. A full account is given of Loeb's work to elucidate the physico-chemical aspects of the phenomena of fertilisation.

There is a careful account of the accessory reproductive organs of the male. The biochemistry of the sexual organs is dealt with by Dr. Cramer, but really not much is definitely known of this subject, in mammals at least. There is an interesting chapter in which is collected what is known regarding the ovary and testes as organs with internal secretions, while the chapter on fœtal nutrition and the placenta is one of the fullest in the book. A special chapter on the changes in the maternal organism during pregnancy is contributed by Dr. J. Lochhead under the following heads: (1) The stimulus for the maternal changes during pregnancy; (2) changes in the metabolism of the mother; (3) changes in the maternal tissues during pregnancy. The innervation of the female generative organs, uterine contraction, parturition, and the puerperal state are next dealt with. Lactation, fertility, the factors that determine sex, the phases in the life of the individual, the duration of life, and the cause of death complete the wonderfully interesting story set forth by the author with perfect clearness, and with a supply of pictorial illustrations that adds greatly to the value of the work.

We feel sure that this book will be warmly welcomed by the biologist, as well as by the physiologist and those interested in the ever-growing subject of eugenics. The work is dedicated to Walter Heape, whose original work marks a period in the history of this engaging subject.

A System of Syphilis. In Six Volumes. Vol. V. Oxford Medical Publications. Edited by D'ARCY POWER, M.B. Oxon., F.R.C.S. Eng., and J. KEOGH MURPHY, M.C. Cantab., F.R.C.S. Eng. With an Introduction by Sir JONATHAN HUTCHINSON, F.R.S. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 356. Price £2 2*s.* per volume net, or £10 10*s.* net for six volumes.

The fifth volume of this very excellent "System" deals with the Affections of the Skin in Syphilis, by Dr. Phineas S. Abraham and Dr. Haldin D. Davis; Ocular Syphilis, by Mr. C. Devereux Marshall; Aural Syphilis, by Mr. C. Ernest West; and Syphilis in the Upper Air Passages, by Dr. StClair Thomson.

The first section, which deals with diseases of the skin, is excellently written, and contains a good account of the numerous skin eruptions that may be met with in this disease. Of necessity a good deal is repeated which has appeared in previous volumes, but without spoiling the completeness of the description this is inevitable, and it is, indeed, rather an advantage than a drawback, because it eliminates tedious and annoying cross references. The section contains some 30 illustrations, nearly all direct colour photographs, beautifully reproduced and of great merit.

In a short appendix to this section an account is given of the chemical nature and uses of the new remedy, dichlorhydrat-diamidoarsenobenzol, salvarsan, or "606," as it is commonly called. It is a great pity that these volumes have been published so soon after the discovery of this apparently specific drug for syphilis. It would have added greatly to the value of the work if the results of the administration of "606," as far as they have gone, could have been included, but unfortunately the book has been published just a few months too soon. Most of the reports which have so far appeared in our columns and elsewhere lead to the belief that the contentions put forward by Ehrlich with regard to this new remedy are by no means extravagant, and that it is possible that we may find in "606" a most valuable remedy for syphilis. It is already clear, however, that the drug must not be used without care and a proper selection of cases suitable for its administration, and the important question whether the results obtained are permanent or only temporary still remains to be solved.

The article on Ocular Syphilis, contributed by Mr. Devereux Marshall, forms an inclusive, and at the same time succinct, account of these important affections of the eye. Aural syphilis is one of the worst forms of this disease, at any rate when certain parts of the auditory tract are involved—for example, the labyrinth; and although the treatment of syphilis has made such vast strides during the last 50 years, yet the outlook in these distressing cases is still exceedingly hopeless. This has resulted from the extreme intractability of the conditions, the fact that the changes in the labyrinth are painless and insidious, and from their irremediable nature when once established. The very interesting subject of syphilitic affections of the nose, pharynx, and larynx is fully discussed by Dr. StClair Thomson, and there are some good illustrations accompanying this section.

On the whole, this volume is well up to the standard of the preceding ones and carries on the good work of the previous writers. The sixth volume was favourably reviewed in these columns a few weeks ago. The editors are to be congratulated on the uniform success that has attended the issue of each instalment of the book.

Lehrbuch der Krankheiten des Herzens und der Blutgefässe (Handbook of Diseases of the Heart and Blood-vessels). Von Dr. ERNST ROMBERG, o. Professor und Direktor der Medizinischen Klinik in Tübingen. Second edition. With 69 illustrations. Stuttgart: Ferdinand Enke. Pp. 588. Price 14 marks, bound.

RESEARCH, both clinical and experimental, in regard to the phenomena presented in disease of the heart and blood-vessels, has proceeded so rapidly during the last few years that the literature is enormous, and much useful information lies more or less hidden in monographs and in papers in periodical medical publications. A text-book affording a critical review of recent work and containing thorough descriptive accounts of the individual diseases and morbid conditions, while providing practical recommendations in regard to their treatment, should be of great value. Such a text-book is Professor Romberg's work. The appearance of a second edition is good evidence of the esteem in which it is held in Germany. In the preface to this edition Professor Romberg strongly urges that we should study the complex problems of the circulatory system in disease from as many aspects as possible, and he utters a strong note of warning against the tendency to over-estimate the value of any one mode of examination. As an example, while admitting the great help that has been afforded by the study of the venous pulse, he is of opinion that at the present time there is some danger of over-estimating the value of the conclusions drawn from it. It is this critical note, as well as its wide range, which gives this book its special value.

The introduction is devoted to general considerations, including anatomical and physiological details, and to the general methods of examining and recording the signs of cardio-vascular disease. The symptoms and physical signs of organic heart lesions are next categorically described in detail, including those due to the congestion of other organs. Chronic insufficiency of the heart muscle apart from valvular disease is fully described, and the various forms are clearly differentiated according to their etiology, each

form being noticed separately. The individual valvular lesions and the clinical manifestations of each are dealt with. Under the physical signs of aortic regurgitation Professor Romberg mentions the occurrence of Flint's murmur, but states that he has never yet observed it, a statement which seems remarkable, since this murmur is by no means extremely rare. He lays special stress on the occurrence of true aortic regurgitation without the presence of a diastolic murmur. Certain other general statements in regard to some of the left-sided lesions are not quite in accord with the generally accepted views in this country—e.g., mitral regurgitation is said to be the most difficult of all acquired valvular defects in diagnosis. Although it is explained that the chief difficulty consists in distinguishing between organic valvular defects and mechanical incompetence from muscular weakness, yet this is surely a lesser difficulty than the diagnosis of aortic stenosis. Again, it is stated that pure mitral stenosis is the rarest of all left-sided lesions; indeed, Professor Romberg states that he has seen only two cases. Admitting that regurgitation is a frequent accompaniment, clinically no inconsiderable portion of cases present physical signs of stenosis only, a fact which Professor Romberg afterwards admits. Congenital heart lesions are dismissed with but very brief notice, and this section is not worthy of the general character of the book. The treatment of chronic heart failure and of valvular defects is exhaustively considered, and constitutes the best feature of the work, while providing a clear account of German practice in this matter. The section is, moreover, admirably arranged, the various factors in treatment being dealt with separately and at considerable length.

Affections of the myocardium and of the endocardium are fully dealt with, and clear accounts are given of their clinical characters, diagnosis, and treatment. For the puncture of the pericardium to withdraw serous effusions, the method advised is to insert the trocar and cannula outside the left nipple line in the fifth or sixth interspace, at a spot where there is dulness, but where no impulse is felt or pericardial rub heard. Under the heading of diseases of the blood-vessels useful descriptions of arterio-sclerosis, aneurysm, thrombosis, embolism, and phlebitis are included. Lastly, the various neuroses of the heart and blood-vessels are considered. A few illustrations and extensive bibliographies at the end of each section add to the value of this useful book.

Plant Anatomy. By WILLIAM CHASE STEVENS. Second edition. London: J. & A. Churchill. 1910. Pp. 379. Price 10*s.* 6*d.* net.

THIS work deals with the anatomy principally of the higher plants from the standpoint of the development and functions of the tissues. It does not profess to be a work of reference comparable to De Bary's "Comparative Anatomy," but rather a book which the student can use when doing his practical work, the necessity of such work being emphasised by the inclusion of illustrative studies at the end of each chapter. We like the treatment of the subject-matter; the anatomy of plants, in our opinion, should be treated first from the physiological rather than the morphological point of view, and such treatment makes the subject of much greater interest to the student. Further, the work is not overloaded with details; this is an important feature, for sometimes text-books of an elementary nature give too many details, so that the tendency of the student is not to differentiate between fundamental and less important facts.

The volume under review starts with the consideration of the cell, and then passes on to the differentiation of the tissues, secondary increase in thickness, protection from injuries and loss of water, gaseous interchange, translocation of food-stuffs, storage of food, secretion, and excretion. Also there is a chapter on reproduction, which includes the development of microspores and macrospores, together with a short account of Mendel's laws and some features arising therefrom, a subject which seems to have been dragged in without reason. The latter portion of the book deals with micro-technique, and the two final chapters are concerned with the micro-chemistry of alkaloids, glucosides, carbohydrates, colouring matters, and other plant products, and with the detection of adulterations in foods and drugs respectively. It is thus seen that the range of the book is pretty wide.

We think that the continuity of protoplasm in sieve-tubes and other elements should have been dealt with in the more descriptive part of the book rather than in the chapter on the micro-chemistry of plant products. As it stands, this important phenomenon may be overlooked. The same criticism also applies to callus, which might have received more attention. In a few cases statements might have been qualified; thus, on p. 36 it is written that "the walls of both sieve-tubes and companion cells remain cellulose." The qualification appears desirable, since in the sunflower, a type very commonly used in this country, lignification of the sieve-tubes may take place. There are 152 illustrations, many of which are original and the majority very good.

We consider the book on the whole distinctly good. The clearness of statement, the sufficiency of figures, and the practical directions make it a work that can be safely recommended, not only to the student working under the direction of a teacher, but also to the amateur who has no such advantage.

Manual of Human Embryology. Edited by FRANZ KEIBEL (Freiburg-i.-Br.) and FRANKLIN MALL (Baltimore, U.S.A.). In two volumes. Vol. I. With 423 illustrations. London and Philadelphia: J. B. Lippincott Company. 1910. Pp. 548. Price 30*s.* net.

THIS is the work of a number of German and American embryologists who have collaborated in its production, and the work itself appears simultaneously in Germany and America. The chapters originally written in German have been translated by Professor McMurrich, while the English chapters have been translated for the German edition by one of the editors—Dr. Franz Keibel, who is also responsible for a short historical introduction. Von Baer he rightly regards as the real founder of comparative embryology; indeed, his epoch-marking treatise was considered by so high an authority as Kölliker to be "the best that embryological literature of all times and all peoples has to show." Dr. Keibel also discourses clearly, suggestively, and comprehensively through 90 pages on the germ cell, fertilisation, segmentation, young human ova and embryos, the formation of the germ layers, the gastrulation problem, and gives a summary of the development of the human embryo and the differentiation of its external form.

The human ovum retains its transparency in all stages of development, but it possesses no micropyle. The author found human spermia still motile on the third day in the testes of an executed criminal, the organs having been placed unopened in picro-sublimate; but gynæcologists have observed motion after much longer periods, while in bats the spermia may remain active for months in the female genitalia. "Nothing is known concerning the fertilisation of the human ovum," and "the segmentation stages of the human ovum have not yet been observed." Nor has the formation of the germ layers been observed in the human ovum. In the description of very young ova the author

makes use of the ovum described by Teacher and Bryce, that described by H. Peters in 1899, and the more or less perfectly described human ova by other observers. The summary of development of the human embryo and the differentiation of its external form follows pretty closely the lines of His, and some of the excellent illustrations are taken from Retzius and from Keibel's own faithful representations of embryos at different stages.

To Grosser of Prague is entrusted the development of the egg membranes and the placenta, and also the subject of menstruation, which together occupy another 90 pages, comparative placentation being omitted. It would appear that the mucous membrane of the corpus uteri is never in a completely resting condition in a fertile female. Growth and degeneration alternate regularly and form together a menstrual cycle of normally 28 days, which cycle may be divided into certain more or less clearly marked periods or phases, which are carefully described, and the morphological changes figured and illustrated by several faithful woodcuts from Hitschmann and Adler. Professor Mall contributes an excellent chapter on the Determination of the Age of the Human Embryo, and also one on the Pathology of the Human Ovum. Both chapters are well illustrated by woodcuts. The latter half of the work is devoted to the Development of the Integument and its Appendages, by F. Pinkus; the Skeleton and the Connective Tissues, by C. R. Bardeen; the Muscular System, by W. H. Lewis; and the Cœlom and Diaphragm, by Professor Mall himself.

So far as it goes, this book is the most complete treatise on human embryology which we possess in English and will be welcomed by all workers in this subject. The bibliography is very full. Many standard works are laid under contribution for illustrations, the whole number, with numerous original figures, making a total of 423. Many of them are rendered more helpful by being coloured. The book, especially those chapters dealing with the integument and connective and muscular tissues, will also prove useful to the histologist, quite apart from the very elaborate treatment of the morphogenesis of the skeletal system, which will appeal to anatomists.

We commend this treatise cordially to the attention both of gynæcologists and of embryologists as a storehouse of information, well arranged, and full of data drawn both from animal and human embryology.

Electrotherapeutics and Roentgen Rays. By MIHRAN KRIKOR KASSABIAN, M.D., Director of the Roentgen Ray Laboratory of Philadelphia General Hospital, &c. Second edition. Revised and enlarged. London and Philadelphia: The J. B. Lippincott Company. 1910. Pp. 540. Price 15*s.* net.

A MELANCHOLY interest attaches to the appearance of this work in this country in that it synchronises with the announcement of the death of the author from the effects of chronic X ray dermatitis. He was a hard and earnest worker, and, in fact, was attending to his duties within a day or two of his end. It was our pleasure to review the first edition of his book some three years ago, and the changes and the additions in the issue before us are a great testimony to the advances made in radiology during recent years. It is not necessary to review the whole book in detail; we notice among the new material chapters dealing with instantaneous radiography, tele-radiography, chromo-stereo-radiography, and plastic radiography. These are all very complete and may be considered an accurate guide to the practice of the novel applications of X ray technique.

But we wish Dr. Kassabian, with his large experience, had given us more of his own opinions and not taken up so much of his book in quoting the opinions and experiences of others, although no doubt the preparation of so much material entailed a great deal of work and much reading.

Throughout the book numerous excellent illustrations have been added to demonstrate more clearly the various modifications of practical X ray work.

A Practical Guide to the Newer Remedies. By J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon., Assistant Physician to the Bristol Royal Infirmary; Lecturer in Pharmacology in the University of Oxford; and Clinical Lecturer in the University of Bristol. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 273. Price 5*s.* net.

THE author is careful to point out in his preface that this book does not concern itself with patent medicines or secret remedies, nor does it deal with therapeutic methods as such. A successful attempt has been made to pass in review the newer drugs (mainly the products of synthetic chemistry) the composition and the pharmacology of which have been more or less accurately ascertained. In order to give a practical value to the work the various drugs described have been criticised and compared, and the experimental and clinical evidence for and against the usefulness of each has been carefully weighed, whilst in all cases directions are given as to dosage and the usual mode of administration. Much valuable information is contained in this work, and the complete manner in which the investigations have been made gives confidence in the opinion expressed by Dr. Fortescue-Brickdale.

The paragraphs on arsenic and its compounds will be found of interest. The cacodylates and arylarsonates are duly described, especial attention being drawn to atoxyl. The conclusion is arrived at that in syphilis injections of atoxyl cannot take the place of the classical treatment by mercury, although in many cases a temporary improvement occurs. One of the best chapters in the book is that on hypnotic drugs. A large number of synthetic hypnotics are now on the market, and, speaking generally, they have been found satisfactory clinically. It is pointed out, however, that they vary considerably, both in their chemical composition and in their physiological effect, so that instead of increasing the dose of a mild hypnotic if it fails to produce sleep the physician may employ another of greater strength, and thus avoid, perhaps, unpleasant after-effects. For purposes of description a practical method of grouping is adopted. The first division is headed "Dangerous Hypnotics"; amongst these are included tetronal, isopral, chloralose, and chloralurethane. Division II. contains those hypnotics "having no special advantages"; amongst these are mentioned trigemin and propion. In Division III. the "mild hypnotics" are discussed, such as urethane, hedonal, and chloralamide. We agree with the opinion expressed that the last named is one of the safest hypnotics, and it is especially indicated when there is cardiac weakness. Division IV. contains the "medium hypnotics," such as paraldehyde and sulphonal. Division V. contains the "powerful hypnotics," such as trional and veronal. Other chapters worthy of study are those devoted to anæsthetics and to antipyretics.

Dr. Fortescue-Brickdale has supplied a useful guide to the use of those drugs which have been more recently introduced.

LIBRARY TABLE.

Diseases of the Skin, including Radiotherapy and Radiumtherapy. By ERNEST GAUCHER, Physician to the St. Louis Hospital, Paris. Translated by C. F. MARSHALL, M.D. Vict., F.R.C.S. Eng. London: John Murray. 1910. Pp. 460. Price 15*s.* net.—The expectations aroused by the announcement of a volume on skin diseases by Professor Gaucher have

not been disappointed by a perusal of the book. Special articles have been written for the volume, adding greatly to its usefulness and interest. Thus, Wickham, Degrais, and Domenici describe the recent developments of radiumtherapy; Monier-Vinard writes on sporotrichosis, Rubens-Duval on blastomycosis, and Domenici on mycosis fungoides. For the English reader much of the interest of a book on dermatology, written by one of the physicians of the St. Louis Hospital, lies in the novel methods of description and treatment. It appears strange, for example, that at St. Louis psoriasis should be treated chiefly with arsenic, and that no mention is made of the excellent results obtained, especially in acute cases, with salicylic acid. In all English text-books we should find chrysarobin described as the best local remedy. Professor Gaucher mentions it among a list of other drugs, and pauses only to consider its disadvantages. In the descriptions of comedones, acne, and seborrhœa, the conclusions of Dr. Sabouraud are but lightly referred to; perhaps a wise step in a book intended chiefly for students. The practice of radiotherapy in dermatology has been carried probably to a higher degree in France than in any other country, and when this is remembered Professor Gaucher's remarks on p. 40 will be noted with interest and some surprise. In his experience there is a form of skin disease which is peculiar to operators, who, he says, suffer from a radioneuritis due to an ascending neuritis which is manifested by thin glossy skin, telangiectases, ulcerations and fissures, and papillomas which may become epitheliomatous. This condition is caused by repeated small doses of the rays, and Professor Gaucher says he has seen three cases. In this country such conditions have been so frequently seen both in operators and in patients who have had many short exposures to the Roentgen rays that the only conclusion to be drawn from Professor Gaucher's extremely limited experience is that French operators must have employed proper precautions for their safety in advance of other nations. The illustrations have been taken mostly from models in the St. Louis Hospital Museum and from Professor Gaucher's private collection, and it is matter for regret that the process of reproduction has not done justice to the models; few give a clear representation or clinical picture of the disease. This drawback to an excellent text-book should be remedied in a future edition. The book is written with an ease and fluency which render it most attractive reading. The descriptions are vivid, brief yet complete, and stimulate thought. The volume will meet the needs of the advanced student who desires something between the small handbooks and the large volumes such as those of Dr. Radcliffe Crocker.

West African Hygiene, with Recent Observations on Yellow Fever and West African Fevers. By EDWARD F. GRUNE, M.R.C.S.—This little pamphlet, which does not appear to be on sale, is stated by its author to have been written with a view "to disseminate the most recent of opinions of those at work on the spot where the diseases are prevalent." Although it has professedly been prepared for the benefit of members of the medical profession as well as for ship captains and others who may be called upon unexpectedly to deal with tropical fevers when skilled advice or assistance is not available, it appears to us that the work is more suited for the latter class than for the former. Perusal of the pamphlet, however, may stimulate some readers to seek further information in the recognised text-books on the subject. Much of the advice given may be regarded as sound and sensible, but we fear some may raise objection to the statement that "in tropical countries it is most important constantly to smoke cigars, and ladies should not hesitate to smoke cigarettes," to keep the mosquito at bay. We were under the impression that there was now a general agreement in the scientific world to designate the transmitter of yellow fever as the "Stegomyia calopus," but in this work the author calls it sometimes the "Culex fasciolata"; at other times the "Stegomaier fasciolata" or the "Stegomayer mosquito." Whether the work is intended for medical or non-medical readers care should be taken that the scientific terms are given correctly.

Saunders' Question-Compends. No. 1: Essentials of Physiology. Prepared especially for Students of Medicine. By SIDNEY P. BUDGETT, M.D., Washington. Third edition. Revised by HAVEN EMERSON, A.M., M.D., Demonstrator of Physiology in Columbia University, New York. Arranged with Questions following each Chapter. Illustrated (Figs. 27). London and Philadelphia: W. B. Saunders Company. 1909. Pp. 250. Price 4*s.* net.—These abbreviated lecture notes are intended for students to read with a text-book and not as a substitute for a larger work, which "Compends" often pretend to be, but are not. Histology and reproduction are practically omitted, while the notes on the senses, except the eye, are very condensed. The diagrams of tracts and connexions in the central nervous system are useful. The text runs on pleasantly, and so far as it goes it gives a straightforward account of the subjects with which it deals, but the information given would not meet the requirements of the higher examinations in this country. The book is, however, suitable for a rapid *coup d'œil* to refresh the memory. Names of famous experiments and their authors and dates of great discoveries are strikingly absent, as are descriptions of methods. The words "kymograph" and "sphygmograph" do not find a place in the index, which is copious. Globulicidal is given correctly in the index, but as "globucidal" in the text. On p. 43 it would be more correct to read "ventricles" than "ventricle." The weakest part of the work is that on digestion. Lipase is not mentioned as such, and the text is still in the "amphopeptone" stage. Enterokinase, erepsin, gastrin, secretin, and hormones are conspicuous by their absence. A suggestive feature is the list of questions—"Why does serum remain liquid at 0° C."? Should distilled water not be injected into the blood-vessels? Is the respiratory quotient of a herbivorous animal modified by starvation? Many of the questions are ingenious, and framed to test the student's knowledge of the text.

Self and the Other. By VICTORIA CROSS. London: T. Werner Laurie. Pp. 303. Price 6*s.*—The book can be recommended only to those who like sensationalism, wild improbabilities, and medical absurdities. The hero is attacked by "congestion of the lungs" while living in a Civil Service college, and is devotedly nursed by a young Hindoo lady who is studying medicine at a neighbouring college. She looks after him for a fortnight and feeds him on curry. Naturally they fall in love with each other; they go to Constantinople together; the plague breaks out and the Hindoo lady does wonders in nursing the sick. Finally, she is attacked by what we suppose Miss Cross means to be plague, but her description of the disease reads like an account of the symptoms of cholera. She dies, and over her body the hero cuts his throat with a razor, but while "a flood of hot blood streamed down and over her breast and neck" he does not die, although in addition we are informed on p. 290 that he had plague and "brain fever." A note, presumably by the publisher, on the loose cover of this novel informs us that "It is impossible to give a description of this book—the greatest thing Victoria Cross has done," so we shall not make further attempt.

JOURNALS AND MAGAZINES.

Annals of Tropical Medicine and Parasitology. Vol. IV., No. 3. Dec. 20th, 1910. Liverpool: University Press. London: Archibald Constable & Co. Illustrated. Pp. 116. Price 7*s.* 6*d.* net.—The last number of the *Annals of Tropical Medicine and*

Parasitology contains the following contributions: (1) Some Enumerative Studies on Malarial Fever, by Major Ronald Ross and David Thomson; (2) A case of Blackwater Fever followed by a Peculiar Relapse without Hæmoglobinuria or Detectible Plasmodia, by the same authors and G. C. E. Simpson; (3) On Hæmoglobin Metabolism in Malarial Fever, by G. C. E. Simpson; (4) Some Observations on a case of Sleeping Sickness, Coagulation Time of Blood, Albumoses, Choline, Cerebral Sections, by Vishnu T. Korke; (5) Some Observations on Malaria in Relation to Splenic Enlargement and the Treatment of the Crescentic Stage, by N. F. Surveyor; (6) On the Peculiar Morphology of a Trypanosome from a Case of Sleeping Sickness and the Possibility of its being a New Species, by J. W. W. Stephens and H. B. Fantham; (7) on the Pathogenicity of a Trypanosome (T. rhodesiense, Stephens and Fantham) from a Case of Sleeping Sickness contracted in Rhodesia, by Warrington Yorke; (8) on Three New Species of the Genus Glossina, together with a description of the Hitherto Unknown Male of Glossina grossa (Bigot), by Robert Newstead; and (9) Descriptions of a New Genus and Three New Species of Anopheline Mosquitoes, by Robert Newstead and H. F. Carter. Of these, Nos. 1, 3, and 6 are reprinted from the Proceedings of the Royal Society, but are not the papers referred to in an annotation in THE LANCET of Jan. 21st, 1911, p. 182. 1. In this paper some observations upon the number of parasites present in relation to the various "pathological and therapeutical reactions" are recorded. The details of 33 cases are given at the end of the paper. The authors have come to the conclusion that there is a very decided correlation between the number of asexual plasmodia found in the blood and the fever; that as a rule no fever exists unless the asexual forms exceed some hundreds per cubic millimetre; that the asexual forms do not always disappear between relapses; that considerable and continued doses of quinine reduce the asexual forms by 50 to 80 per cent.; that it is probable that the sexual forms require 8 to 10 days for development; that quinine does not affect the sexual forms when once produced, but "ultimately reduces their numbers by destroying the generating cells"; and the hæmoglobin falls markedly with fever, but rises rapidly with convalescence. 3. Dr. Simpson comes to the interesting conclusion that "the main excretory channel for the pigment portion of the blood is the alimentary tract," and that urinary urobilin represents only a small overflow from this source. He considers that the elimination of urobilin is chiefly in the fæces. His method of extracting the urobilin from the fæces was by repeated shaking with large amounts of water acidulated with dilute sulphuric acid, and exposing the filtrates to daylight for some time. There appear to be so many sources of error possible here that we are inclined to agree with Dr. Simpson when he says "the figures obtained may later require revision," although his observations seem to show that his general conclusion is correct. 5. Dr. Surveyor records a series of observations made during 1908–10 when the city of Bombay was highly infected with malaria. Several cases were in a moribund state, and "the blood was found to contain typical rings and crescents in large numbers." It was, however, noticed that in spite of severe infection many cases had no fever, and splenic enlargement was absent. His observations with regard to temperature do not appear to agree with those of Major Ross and Dr. Thomson in (1), but it is to be noted that a number of his cases were of the malignant tertian type. His records of the results of treatment with picric acid and with quinine, of cases in which crescents were present, showed greatly in favour of picric acid. 6. Dr. Stephens and Dr. Fantham describe a trypanosome similar in its morphological characters to T. gambiense, except that among the "stout or stumpy" forms some have the nucleus at the posterior or non-flagellar end. This character seems fairly constant. A striking fact with regard to this strain of trypanosomes is that there is considerable evidence against the possibility of the patient from which it was obtained having been infected through Glossina palpalis. Dr. Warrington Yorke (7) shows that this strain is more virulent to rats, monkeys, mice, guinea-pigs, rabbits, and goats than T. gambiense. It seems that the view that we have in T. rhodesiense (as Dr. Stephens and Dr. Fantham propose to name this form) a new species is well founded.

The Archives of Internal Medicine. Vol. VI., No. 5. Nov. 15th, 1910. Chicago: American Medical Association. Subscription price, $4.00 per annum; single copies, 50 cents. —The contents of this number are: 1. The Use of Pure Lipoids and Alcoholic Extracts with Active and Inactive Serum in the Complement Fixation Tests for Syphilis, by Thomas MacRae, A. B. Eisenberg, and Homer F. Swift. This paper includes a comparative study of the effects of using ethereal extracts and alcoholic extracts as antigens. It is stated that the Noguchi method, using active serum, gives the most sensitive reaction in syphilis, the Wassermann and the Noguchi inactive methods standing in the order named. 2. The Wassermann Reaction in the Pathology, Diagnosis, and Treatment of Syphilis, by Richard M. Pearce. A valuable summary is given of the Wassermann reaction and of its practical uses, together with an extensive bibliography. 3. Peculiar Elongated and Sickle-shaped Red Blood Corpuscles in a case of Severe Anæmia, by James B. Herrick. Details are given of a case with very unusual forms of erythrocytes, which are well shown in a plate appended to the paper. 4. The Elimination of Bacteria from the Blood through the Wall of the Intestine, by Alfred F. Hess. Dr. Hess records experiments which demonstrate that bacteria are excreted from the blood, not only by way of the liver through the bile and by the kidneys through the urine, but also to a less extent directly through the intestinal wall. The organism used in these experiments was bacillus prodigiosus. 5. Experimental Lung Anthracosis, by Lewis Sayre Mace. Some experiments are described with talc injected into the peritoneal cavity of guinea-pigs, to test the correctness of the intestinal origin of anthracosis. 6. The Induction of Pancreatic Activity by the Removal of the Adrenals, by J. E. Sweet and R. Pemberton. 7. A Case of Fatal Sodium Chloride Poisoning, by Harlow Brooks. 8. An Experimental Study of the Resistance to Compression of the Arterial Wall, by Theodore C. Janeway and Edwards A. Park. These authors find that the arterial wall offers definite resistance to compression; that in infancy and childhood, and in adults with normal arteries and a normal range of blood pressure, the resistance of the arterial wall is practically negligible. Atheroma is without appreciable effect on the compressibility, while calcification of the arterial wall increases only moderately its resistance to compression. They suggest that the only factor capable of introducing an error of marked importance into the clinical estimation of blood pressure is the state of contraction of its walls, and they insist that the point of return of the pulse after obliteration should always be the criterion of systolic blood pressure. 9. Cutaneous Tests with Corn Extracts in Pellagrins. The results are given of some experiments to determine whether patients suffering from pellagra showed any hypersensitiveness to extracts from samples of good or spoiled corn (maize). These were negative in all cases.

Jahreskurse für Ärztliche Fortbildung. (Annual Post-graduate Review.) Munich: Lehmann. Price 16 marks per annum.—The January part is occupied with general physiology and pathology. Professor Johannes Müller deals in the most interesting manner with the intricate problems of the activity of the heart. In the first place the cardiac

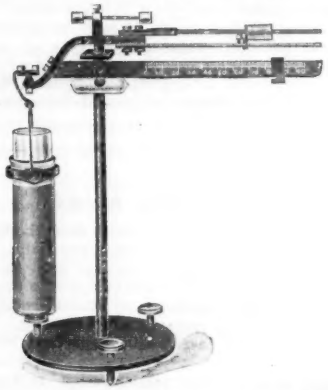
automatism is established on the grounds of numerous experiments. These for the hearts of warm-blooded animals have been made possible by Martin's discovery, that such a heart will go on beating like that of a reptile if only the circulation in the coronary vessels be kept up by injecting an artificial serum into the root of the aorta. Whether any internal glandular secretion is necessary for the maintenance of the cardiac activity is held to be an open question. The region of the roots of the great veins is regarded as the origin of the automatic impulse. The refractory phase, the "all or nothing" law of response to stimuli, and the nervous or muscular origin of the automatism, are carefully discussed. The influence of physical and chemical conditions on the activity of the heart is described under the following heads—viz., temperature variations, oxygen, inorganic salts, and grape sugar. Professor Lubarsch follows with an article on pathology, which is for the most part concerned with the heart. The anatomy, development, and structure of the auriculo-ventricular bundle are shortly described as an introduction to the discussion of the rôle of this structure in relation to disease. In many conditions—e.g., rheumatic carditis and fatty degeneration—the bundle is specially affected by the pathological process. It is regarded as playing a most important part in the conduction of the activity impulse from one part of the heart to another, bridging over, as it does, the fibrous septa which intervene between the auricles and ventricles. This view of its function is of particular interest in connexion with the facts of its relation to cases of the Adams-Stokes syndrome, which is due to the different parts of the heart not acting in harmony. Many cases of sudden heart failure are regarded as the result of disease of this auriculo-ventricular bundle. A few pages are given to the complex and bewildering facts concerning what are called the "chromophile tissues." These, named from their reaction to chromium salts, include the medullary part of the suprarenals, the carotid "gland," and parts of the sympathetic nervous system. Calcium metabolism is in some very close way connected with these structures. Animals deprived of their suprarenals develop a condition like that of rickets or osteomalacia. Further, the excessive administration of adrenal extract causes diabetes in animals. It is considered that there exists a marked antagonism between the functions of the "chromophile tissues" and that of the pancreas. The relation of the pancreas with diabetes is reviewed, and the theory which relates it to the islands of Langerhans is upheld as the result of recent research, especially that of Wechselbaum, who has collected 183 cases and subjected them to careful microscopical examination. The value of Wassermann's reaction in pathology is referred to, as it serves to clear up the nature of many a doubtful post-mortem finding. The reaction is given as well in the dead blood as in the living.

New Inventions.

SPECIFIC GRAVITY APPARATUS.

A DESCRIPTION of a new instrument for the determination of the specific gravities of different liquids will, I believe, be appreciated by the members of the medical profession. With the existing instruments (more especially represented by the urinometer) many difficulties and errors tend to make what should be a very simple operation one which is continually doubtful as to obtaining a perfect result. First and foremost is, of course, the expansion of the glass bulb of the instrument by an increase in the temperature. To such an extent does this occur that the variation from a hot to a cold day will produce a very appreciable difference in the result. Again, the annoyance caused by the instrument "climbing the tube" is very real. I refer to the tendency of the urinometer to be attracted to the side of the vessel containing the urine, and to be pulled up the side by capillary attraction.

The difficulty, again, of reading the scale from the under surface of the liquid when the urine is turbid is one which is both most annoying and frequent. Again, in examining candidates for life assurance every medical man must at some time or other have appreciated the difficulty of obtaining sufficient urine for the purpose. The assurance companies lay a special stress on the point that the urine should be passed in the presence of the medical examiner, but in very many cases (owing mostly to nervousness on the part of the candidate) the quantity of urine at the disposal of the examiner is entirely inadequate for the purpose. It is believed that the instrument illustrated will meet all these objections. As will be noticed, it partakes of the form of a small steelyard, fitted with a very sensitive spirit



level. The tube containing the liquid to be examined is suspended from the short arm of the instrument and the weights on the long arm are moved to the right or left, as may be necessary, until the bubble of the spirit level occupies a central position. The tube containing the liquid holds approximately 150 drops, and, of course, may be used for urine, milk, or any other liquid. The upper scale is graduated to divisions of 100, and the lower scale to tens and units, and in addition a small vernier on the rider enables the reading to be carried to a further figure, thus allowing the calculation to be made to four decimal places—e.g., 1·0607. The instrument, as at present made, is constructed with tempered steel knife edges, though, of course, agate bearings may if preferred be substituted. A range may be obtained of from 0·001 to 2 with the single instrument, and this, I believe, will be admitted to be a large scope for an instrument which measures only 6 inches in length.

Such a method, exact in its results, easy to calculate, and quick in determination, I venture to hope will prove of value to the medical profession generally. Any inquiries regarding the instrument may be made to Mr. W. Martindale, 10, New Cavendish-street, where the instrument may be seen.

Fleet, Hants. C. BUTLER SAVORY, M.D., M.Ch.Edin.

A TUBULAR MOUTH PROP.

THE importance of a good air-way and the advantages generally of the use of a mouth prop in certain cases have been frequently pointed out by Dr. F. W. Hewitt and others.

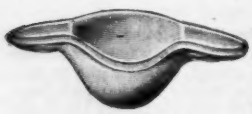
The advantages of a tubular prop over a solid were first pointed out by Dr. W. McCardie. For the last three years I have been using a tubular mouth prop which has given me much satisfaction in cases in which the air-way required improving. It is shown in the illustration, and is made for me by Messrs. G. Barth and Co., of Poland-street, W. One end is much smaller than the other, and if the mouth simply requires keeping open or the lower jaw to be pushed forward this smaller end is inserted. This is easily done, as the mouth has to be opened to a small extent only, and even if the patient is not fully under the use of a gag is hardly ever required, as is more often necessary if the mouth has to be opened wider. In edentulous cases the tendency is to blow out a mouth

prop, not to suck it in; therefore the larger end is inserted in these cases, and it remains between the gums and lips, and is not blown out. If an "artificial air-way" is required to conduct the air behind the tongue, the advantages of which in certain cases have been pointed out by Dr. Hewitt, a perfectly efficient one can be made in a moment by pulling a stout piece of indiarubber tubing over the smaller end as shown by the dotted lines in the illustration. There is an advantage in being able to alter the length of the tubing to suit the depth of the mouth, and I carry three lengths with me. The tubing must be of a fairly rigid kind, or it may be pressed flat against the hard palate. Though the mouth is not unduly opened the air-way is of sufficient size. There is a hole in the larger end to tie it to a wooden wedge or other prop outside the mouth. I have found a tubular prop useful even in the case of small children with much blocked post-nasal cavities, and Messrs. Barth and Co. make these props in three sizes. Amongst other uses of a tubular mouth prop, it is occasionally an advantage to pass the metal mouth tube of a Junker's apparatus through it and allow air to enter the mouth, and if the Junker mouth-tube is forgotten or perhaps dirtied the indiarubber tube can safely be passed between the teeth through the tubular prop.

H. M. PAGE, F.R.C.S. Eng.,
Anæsthetist to Guy's Hospital, &c.
South Kensington, S.W.

A NEW NASAL BATH.

THERE is much divergence of opinion as to the best means of cleansing the nasal cavities, some employing douches, some sprays, and some syringes. Each of these methods has its advantages, but for children and others who are none too careful an apparatus brought to my notice by the Nazene Company of Great Marlborough-street, London, W., and designated by them the nasal bath, seems to be well suited.

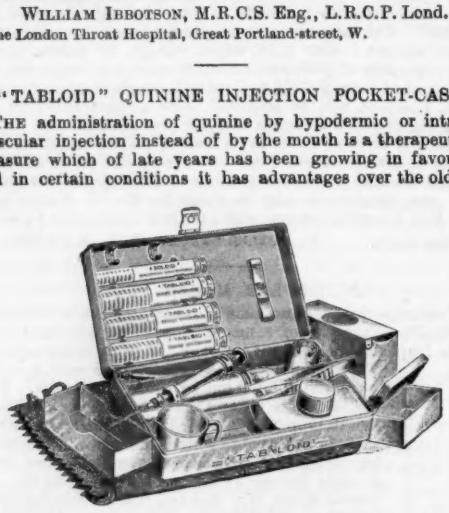


It is exceedingly simple in construction, is sterilisable, and is very compact. It can be carried in the pocket quite easily. It is not liable to be broken, nor can it do any damage to the delicate nasal mucous membrane, as sometimes occurs with glass and rubber syringes. Its advantages over the latter are that it will never wear out and is much more cleanly. Patients like this bath, and find it very convenient and effectual.

WILLIAM IBBOTSON, M.R.C.S. Eng., L.R.C.P. Lond.
The London Throat Hospital, Great Portland-street, W.

A "TABLOID" QUININE INJECTION POCKET-CASE.

THE administration of quinine by hypodermic or intramuscular injection instead of by the mouth is a therapeutic measure which of late years has been growing in favour, and in certain conditions it has advantages over the older



and more usual method. Recognising this, Messrs. Burroughs, Wellcome and Co. have sent for our inspection an outfit which comprises everything necessary for making such injections. The "Tabloid" quinine injection pocket-case is an elegant, compact, and complete outfit. Within a nickel-plated metal case, so small as to be easily slipped into the pocket, are contained a 20-minim all-metal syringe, with needles, a supply of "Tabloid" hypodermic quinine bihydrochloride, a pair of forceps, "Soloid" corrosive sublimate for the preparation of the patient's skin, and all the apparatus—including a sterilising cup and tray, a spirit-lamp, and a match-box—required for the sterilisation of the syringe and the quinine solutions. With the aid of this outfit the practitioner can make sure in practically any circumstances that his injections of quinine are given under aseptic conditions, and the pocket-case should prove useful in all countries where malarial affections are prevalent.

REPORT ON THE WORK OF THE CENTRAL MIDWIVES BOARD FOR THE YEAR ENDED MARCH 31ST, 1910.

DURING the year under review the Board has met 16 times, including four special meetings for the investigation of cases where a local supervising authority had reported a midwife for malpractice, negligence, or misconduct. Sir Francis Champneys was re-elected chairman, but there have been some changes in the constitution of the Board, for Sir George Fordham has resigned the post of honorary treasurer, Mr. J. Ward Cousins has been succeeded in the representation of the Royal College of Surgeons of England by Mr. C. H. Golding-Bird, and Dr. G. E. Herman represents the Incorporated Midwives Institute in the place of Dr. Stanley Atkinson, deceased. The total number of trained midwives on the roll is 17,790, as against 11,419 untrained, but as a large percentage of trained women obtained their certificates without any intention of ever practising, and many others have ceased to practise or are practising in the colonies or in foreign countries, the untrained practising midwives are largely in excess of the trained. The number of penal cases—namely, 53—when compared with the 92 cases of last year, apparently shows a large diminution in the charges of negligence and misconduct, but this diminution is mainly due to the fact that the penal sittings usually held in March were held in April this year, and do not come under review in this report. The penal procedure of the Board as laid down in Rule D has been under consideration. The rule provides that the "secretary or other person appointed by the Board" shall conduct the case against a midwife charged before the Board, after a *primâ-facie* case has been established against her by the local supervising authority. In one or two cases the local supervising authority has claimed to have the conduct of the case, and as this would introduce confusion into the proceedings the Board has passed a resolution disallowing it, and refusing a hearing to the authorities, except when charges having been brought against its officers an answer is to be reasonably expected. The number of cases of ophthalmia neonatorum coming to the notice of the Board in the course of its penal administration has made it apparent that strong efforts are necessary to combat the ignorance and carelessness which so frequently lead to total destruction of the infant's eyesight. The rules on this subject have accordingly been strengthened and a special leaflet dealing with the nature, causes, consequences, and preventive treatment of the disease adapted for the use of midwives has been prepared and circulated. The Board observes with satisfaction that there is a continued improvement in respect of cleanliness, carefulness, and observance of rules amongst midwives.

DONATIONS AND BEQUESTS.—The late Miss Caroline Catherine Williams of Falmouth has, by will, left £6000 to the Royal Cornwall Infirmary, Truro.—An anonymous gift of £5000 has been made to the Cancer Hospital, Brompton, S.W.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN IN DEVONSHIRE.—At the last meeting of the Devon education committee it was proposed to increase the salary of each medical inspector by £175 per annum, in lieu of allowing any travelling expenses. They will be required to perform some additional duties, amongst these being to deliver addresses on hygiene to the children and lantern lectures for the parents.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 25, 1911.

The Increase in Crime.

THE volume of Criminal Statistics for 1909, which has recently been issued by the Home Office, has excited a good deal of comment in the public press, not only on account of the evidence which it affords of an upward tendency in the movement of crime in this country of recent years, but also on account of the explanation of that tendency which the editor of the statistics, Mr. H. B. SIMPSON, has given in his introduction to the volume. Mr. SIMPSON, we learn from the prefatory note of Sir EDWARD TROUP, expresses in this introduction merely his personal opinion and not the official views of the department, but naturally the conclusions which he formulates must carry much weight, as being based on long experience and close study of criminal questions. Briefly stated, the main contentions advanced by Mr. SIMPSON are that there has been a steady increase of criminality during the last ten years, which is more marked than at any previous periods for which such statistics are available; that this increase must be due to the operation during these years of some cause favourable to crime, which before then did not exist at all or did not exercise sufficient influence to affect the figures; and finally, that this cause is a change in public sentiment with regard to crime, a change which, to judge from the extreme form in which it sometimes finds expression, is tending to substitute a maudlin sympathy with evil-doers for the natural and healthy reaction of a vigorous community against its anti-social elements. Of course, in any such statement of the question it is necessary to distinguish very carefully between the facts and their interpretation; and this is no easy matter, for in the complex problem of crime not only are the facts very hard to arrive at, but it is also nearly impossible to state them without some involuntary admixture of interpretative tendency. Take this very statement that crime is increasing; what it really means is that there is an increase in the number of persons tried for indictable offences or an increase in the number of such offences reported to the police; but petty larceny and murder are both indictable offences, so that a considerable decrease in the frequency of murder coincident with a more considerable increase in the frequency of petty larceny would appear by this test as an increase of criminality. And Mr. SIMPSON tells us that in fact the recent upward movement of crime is really of this relatively reassuring nature; it is an increase confined to offences of acquisitiveness, while offences of violence, on the contrary, have notably and steadily declined, and not only the offences of a gravely homicidal character, but also assaults.

At the worst, then, the increase of crime would indicate a growth of dishonesty; and before we admit even that interpretation, we have to take note of several qualifying circumstances. In 1909, for instance, pauperism was increasing, drunkenness was decreasing, and the percentage of persons fined who went to prison in default of payment was higher than for many years—all these being phenomena usually indicative of bad economic conditions amongst the class of the population from which the petty offenders are recruited. And over a long stretch of years bad economic conditions have been found to correspond roughly with an increase in crimes of acquisitiveness. Moreover, it must not be forgotten that increased density of population in itself tends to multiply the temptations and the opportunities of dishonesty, and, further, that many modern improvements and innovations create new occasions for crimes of this sort; it is notorious, for instance, that the robbing of penny-in-the-slot gas-meters has become quite an active form of criminal industry in the last few years. When due account is taken of such considerations as these, it will be seen that the increase of crime recorded of late years need not imply any real weakening of the moral fibre in the community. And if, as seems probable, these oscillations in the amount of crimes of acquisitiveness are largely dependent on economic influences, that fact in itself would tend to show that the more lenient attitude of public sentiment towards the criminal, however absurd it may be in some individual instances, is not without justification in the main. It expresses the recognition by the community of its responsibility for the acts of the evil-doer, that, in short, society has the criminals that it deserves. A community which recognises that economic conditions of its own creation, on the one hand, and, on the other hand, morally and mentally feeble adolescents for whose control and segregation it fails to provide, are important factors in its criminal problem, will naturally lean towards tolerance in penal methods. And it will be the more prone to this attitude in an age when there is a general softening of manners and a decline in the spirit of violence and brutality. The figures presented by Mr. SIMPSON show that this improvement in manners is exercising a considerable influence on the anti-social classes and is causing a steady decline in offences of violence. It is only natural, therefore, to find that it is also reacting on the attitude of society towards the criminal and is making that attitude milder and more tolerant. And though this change in public sentiment is attended with some risks, risks on which Mr. SIMPSON rightly and forcibly insists, it must not be forgotten that it is to it that we largely owe the possibility of applying to the treatment of the criminal these humane and scientific methods the initiation of which in this country has been the most notable advance in penal reform in modern days.

The proposal to treat adolescent offenders by reformatory measures, as is done to-day under the Borstal system, would have been scouted as sentimental and impracticable in times when it was confidently believed that crime could be eradicated by laws of Draconian harshness and when legal luminaries could express their intention of "putting down suicide" by penal methods. Of course, there is a danger that the sentimentalists, whose voice is always loud in the land, may exploit this public feeling so as to hinder

the full application and development of these reformatory methods by weakening the element of firmness and discipline which is essential to their success. It is easy to see evidences of this tendency in the outcry against the system of preventive detention for habitual criminals, in the slowness to utilise to the full the provisions of the Prevention of Crime Act for young offenders, and in the hysterical criticisms to which prison administration is so frequently subjected in the public press. Every protest against the emotionalism which inspires these regrettable exhibitions of flabby sentiment is rendering, we think, a genuine service to the progressive spirit on which they are a morbid outgrowth. And this is, in fact, the lesson which it is most necessary to teach at the present moment in the history of penal reform. It is not against sentimentalism that a warning is needed, but against what is the common root both of sentimentalism and of unreasoning severity—namely, the temper of ignorant emotionalism, the temper which will not let action wait on knowledge, the temper which is so eager to treat symptoms that it can never reach to causes, the temper which only sees the immediate result of action and sees that ill. This spirit, of course, works mischief in every branch of social policy, but hardly anywhere has its influence been more pernicious than in regard to the treatment of crime.

An Act of Homage to a Medical Martyr.

IN compliance with an order issued by the President of the Mexican Republic a marble memorial stone was uncovered in the National Bacteriological Institute of the City of Mexico by the State Secretary of Public Instruction and the Fine Arts on June 24th, 1910, as "an act of homage" to the memory of Dr. HOWARD TAYLOR RICKETTS, who died on May 3rd, having fallen a victim to typhus fever while carrying out important scientific investigations into that disease in the city. As a further recognition of the benefits which Dr. RICKETTS'S work had conferred upon the Mexican nation the President commanded the publication of a commemorative volume in which is given a portrait of the deceased, together with an account of the ceremony and the orations delivered by certain distinguished persons when the memorial stone was uncovered. The volume, which is printed in Spanish, reproduces five papers written by Dr. RICKETTS, mostly in collaboration with his countryman Dr. RUSSELL M. WILDER, on the subject of Mexican typhus, locally known as "tabardillo," four of which have already appeared in the *Journal of the American Medical Association*. By further order of the President the volume has been sent, not only to the Mexican scientific institutions, but also to the principal universities, scientific societies, libraries, and medical publications of those countries which are friendly to Mexico. Dr. RICKETTS at the time of his death was 39 years of age; he had graduated at the University of Chicago in 1894. After holding a number of hospital appointments he spent a considerable time in post-graduate study in Paris, Berlin, and Vienna. In 1903 he was appointed an assistant professor in the University of Chicago, and shortly before his death he accepted the offer of the chair of pathology in the University of Pennsylvania. In 1906 he made an investigation into the disease known as the spotted fever of the Rocky Mountains, and showed himself to be an investigator of the first rank. Subsequently, his attention having been directed to the close clinical resemblance between this spotted fever and Mexican typhus, he proceeded to Mexico to conduct his researches on the spot, utilising with the consent of the authorities the clinical resources of the hospitals, as well as the scientific facilities of the laboratories of the bacteriological institute. Anyone who has had the opportunity of examining month by month the statistical reports of the city of Mexico must have been struck with the amount of "exanthematic typhus" recorded there year after year. To prevent the suffering and loss of life occasioned by this malady Dr. RICKETTS undertook his investigations. His observations demonstrated that the disease is not infectious in the ordinary sense, but that it is conveyed by the bites of the body louse (Pediculus vestimenti). This fact alone points out how the infection may easily be prevented, and must prove of the greatest service to the Mexican people. Shortly before his death Dr. RICKETTS announced that he had found in the blood of typhus patients a bacillus which he believed to be the specific microbe of the disease. It is not certain whether the typhus fever of Mexico is the same as that which is found in the Old World. Observations made by Dr. CHARLES NICOLLE in Tunis gave somewhat different results to those obtained by Dr. RICKETTS, but the mode of transmission is precisely the same, and this has been further established by the work of Dr. JOHN F. ANDERSON and Dr. JOSEPH GOLDBERGER of the United States Public Health Service. We are not here concerned at present with the claims of the different investigators to priority in the discovery of the mode in which typhus fever is spread. It is enough for us that Dr. RICKETTS demonstrated the mode for the Mexican form of the disease, and for this alone he has earned the lasting gratitude of that nation. His death adds one more name to the long list of medical heroes who have given up their lives in the search for knowledge by which their fellow men were to be benefited.

The London County Council and the Inspection and Treatment of School Children.

EARLY in December, 1910, the annual report for 1909 of the chief medical officer of the Board of Education was presented to Parliament, and in our review of it we stated that it was a document of great interest and extremely cheerful tendency, but we noted at the same time that Sir GEORGE NEWMAN had been compelled to point out that as far as the medical inspection of children was concerned the County of London lagged behind the rest of the kingdom. The complicated difficulties under which the London County Council has found itself in the matter of education are, many of them, well known to all our readers, and there is no reason to doubt that the Council has in many directions made vigorous effort to deal with these difficulties. Mr. R. BLAIR, the education officer, is struggling

manfully with an elaborate system of organisation the whole blessings of which are not yet obvious to those who are considering education from a general point of view, while the facts are indisputable both that too large a percentage of the children in London are not systematically inspected and that too large a percentage of those inspected escape subsequent treatment. The words of the chief medical officer of the Board of Education, in the report to which we have alluded, conveyed a distinct warning that the London County Council, in the matter of its educational functions, would be required to mend its ways, and a good many of our readers must by this time have asked themselves when the necessary reforms would begin to take place. Medical inspection of school children has now been an integral part of the public health administration of the country for some two years, having become a statutory duty upon local education authorities as far back as the passing of the Act of 1907. There is nothing unreasonable in saying that there ought by this time to have been worked out for the metropolis by the London County Council an adequate scheme of medical inspection, and some system of consequent treatment.

We are bringing these conclusions to public notice being perfectly aware that the Council itself does not consider that the treatment of school children has been properly dealt with. At the meeting on Feb. 14th there were open manifestations of the differences of opinion which are known to exist among the members of the Council as to the course to be adopted. At this meeting among the proposals for increasing the salaries of the principal officers was one to raise the salary of Mr. BLAIR, the education officer, and one of the reasons given by the General Purposes Committee for its recommendation to pay this emolument to one of its servants was the growth of that part of the education service which might be summed up in the phrase, "the care of the child." Medical men will be the first among ratepayers to support the provision of adequate sums in respect of the education of the children of London, but they will ask themselves anxiously whether "the care of the child" in this connexion means his medical welfare, and if so whether the education officer was appointed with any recommendations for medical knowledge which he is now expected to display in return for an enhanced salary. It now seems clear that under one course of procedure the education officer may be invited to supervise in some way the inspection and treatment of the school children under the care of the Council, inasmuch as the existing condition of things is admittedly unsatisfactory; and that the situation was thus interpreted was proved by the suggestion of a member of the Council at the meeting on Feb. 14th, that as a result of deliberations now proceeding in committee Mr. BLAIR might be relieved of work of this nature, inasmuch as it might be coördinated under the Public Health Service. The remark went to the root of the matter. Three courses lie before the Council and are quite definite. It can leave matters as they are; it can invite the education officer to supervise the medical inspection and treatment of school children; or it can follow the course which has been successfully taken by the majority of the educational authorities in the kingdom and place the inspection of school children in the department of the medical officer of health. Over a year ago, out of 314 instances where school medical officers had been recognised by local education areas, the medical officer of health had been selected to act as that officer in 230 cases, and the practical coöperation between the medical officer of health and the education medical officer has proved generally—indeed, as far as we know, universally—to result in good work. With regard to leaving matters as they are, the Board of Education seems likely to have a good deal to say against the adoption by the London County Council of such a course, and it is known that the Council does not lean to this apathy. The attitude of the Government Department towards the London County Council was for a long time one of consideration. The difficulties to be encountered in organisation were recognised, and it was not until it became practically public property that the London County Council was unable to administer satisfactorily one of the statutory duties of a local education authority that the Board of Education, as its duty was, began to insist upon reforms being undertaken. We feel certain that the London County Council, against the virtue of whose intentions we are alleging nothing, has come to the conclusion to make a move in one of the other two directions that lie before it. It will construct for the medical inspection and treatment of school children a scheme under the supervision of the education officer, or it will make such inspection a branch of the general health administration of the county. A report from the Children's Care Subcommittee has been, or shortly will be, laid before the Education Committee of the Council recommending that the work, at present under the direction of the medical officer for education purposes, Dr. J. KERR, should be placed under the supervision of Mr. BLAIR, and it remains to be seen how the Council will act thereon

To place the medical officer of the London County Council for education purposes directly under a lay authority is to run great risks that the Act of 1907 will not be administered in accordance with the purposes of legislation. The medical inspection of school children is a medical affair as well as an educational affair—this the most enthusiastic educationist must admit—and while it is as closely as possible connected with sanitary administration, it is only loosely allied to general pedagogy. We know perfectly well that in earlier days there was no universal adherence among medical men to this view; the matter is obviously one of opinion, but opinion has become now, we think, unanimous. Moreover, those who lay stress upon the medical side of medical inspection are in the advantageous position of pointing to the existing and satisfactory organisation of the sanitation of the country as affording machinery for the actual work; while those who would separate the inspection of school children from the public health service have to devise some other scheme. The subcommittee of the Education Committee at the present moment is apparently taking the view that its medical officer for education purposes is a more natural ally of its education officer than of the chief medical officer to the Council. To us it seems inevitable that sooner or later the inspection of school children will become a

department of the general health service, whose finished and comparatively ancient organisation is quite able to expand in the direction of the necessary duties. There may be an attempt to keep the two things apart, and such an attempt may be successful for a time, but, rash as it is usually to prophesy, it is fairly certain that in the end there will be a union. We confess that we wish the Council would ratify that union at once.

Annotations.

"Ne quid nimis."

THE PATHOLOGY OF THE ONLY CHILD.

THE vagaries and caprices of the only child are almost proverbial, but so far they have attracted but little notice in text-books on pædiatrics, though they are well known to most experienced practitioners. Dr. Joseph K. Friedjung of Vienna contributes an interesting study of this subject to the *Wiener Medizinische Wochenschrift* of Feb. 4th. He states that practically the only references he has been able to find to it are those by Czerny and Neter, both of whom deal chiefly with the defective development of character which seems to occur in some of these children. Dr. Friedjung bases his observations upon 100 children who were the only offspring of their parents, whom he has studied in his private practice. The cases were not selected but simply taken chronologically. There were 45 boys and 55 girls; 86 of them were between 3 and 11 years of age, 9 between 11 and 15, the remaining 5 being under 2 years. Of the 100 children only 13—viz., 6 boys and 7 girls—could be described as normal; the remaining 87 proved to be neuropathic in organisation in greater or less degree. For comparison Dr. Friedjung studied the nature of 100 children from families with numerous children also casually collected. Of these 69 proved to be normal and only 31 showed neuropathic tendencies. Of the 87 "nervous" only children 18, comprising 7 boys and 11 girls, were severely affected. In general, the girls showed the more marked changes. The manifestations are divided by Dr. Friedjung into general and local. He refers, first, to the mental characteristics of the only child, as described by Neter, especially to his nervousness, lack of self-reliance, precocity, vanity, egotism, and unsociability. One special feature is often extreme timidity, even to the extent of morbid terror. This symptom was present in all but 12 of the 87 children showing abnormal conditions. They were often afraid of dark rooms and of sleeping alone. Occasionally they were nervous of loud noises and of certain animals, though not necessarily of large ones like horses and dogs. In close relation to these morbid fears was the restlessness at night, from various degrees of which up to actual night terrors 49 of these children were found to suffer. Capriciousness and peevishness were complained of spontaneously by the parents of 7 of the boys and 12 of the girls in this series, and on inquiry these characters were found to be present in the majority of the remaining cases. Precocity or too rapid evolution of the intellect was the rule and present in all but 9 of the 87 nervous children, and was also observed in 5 of the 13 normal cases. Thirty-three of the 100 children were brought to Dr. Friedjung for defects in nutrition. Many of them were pale, of weak muscular development, and had but little subcutaneous adipose tissue. In many cases this appeared to be due to severe anorexia, from which 50 of the 87 abnormal children suffered. As many as 37 of them suffered from habitual vomiting and 20 from chronic constipation. Frequency of micturition, apart from cystitis or any abnormality of the urine, was a commonly observed symptom, and enuresis was recorded in 10 boys and 2 girls. Lichen urticatus occurred in 26 boys and 22 girls, and 16 of these were much distressed by the itching produced. Dr. Friedjung is of opinion that diseases with a nervous factor such as pertussis run a more severe course in many of these children, but believes that the supposed severity of many other complaints, as they fall upon only children, is apparent rather than real, being, in fact, an exaggeration on the part of the anxious parents. Dr. Friedjung discusses the causation of the peculiarities he has observed and recorded in his paper. He agrees in the main with Neter's suggestions—viz., that they are due to over-education and to the lack of the influence of brothers and sisters—but he points out that these are not the only factors, since he maintains that the favourite child of large families may show similar peculiarities. His observations are certainly of interest and constitute an addition to our knowledge of the subject which should stimulate further study of the characters of these children.

HOW TO IMPROVE LONDON'S TRANSPORT.

BEFORE the days of the Bankers' Clearing House we are told that about 40 bankers called individually upon one another, making altogether about 1560 visits in the day. Now the same exchange of business can be accomplished by a single call from each banker at the Clearing House, making altogether 40 visits in the day. Mr. A. W. Gattie proposes to apply the same principles to the handling of goods and parcels and to establish a central goods clearing house in London, where about 100,000 tons of goods could be dealt with in the day with the consequent saving of time and labour that follows good organisation. The necessity for such organisation becomes apparent when we are informed, upon the evidence of facts and figures, that recent increased locomotive power in our railway engines coincides with a decrease in their earning power, and that this is due to the difficulty experienced in transference and handling of goods on account of the badly arranged goods railway stations, and that there are in use in London streets twenty times as many goods vans as are necessary for the work required to be done. In a lecture which Mr. Gattie delivered before the London Chamber of Commerce last July, entitled "How to Improve London's Transport," he outlined the scheme of a goods clearing house. With this report and with the help of an article which appeared in a subsequent number of *The Electrician* some idea can be got of the ambitious scheme which is on foot, and is expected at an estimated cost of £6,000,000 to deal with London's transport and free its streets from 25 per cent. of the total vehicular traffic—viz., that made up of loitering vans and other slow-moving vehicles, thus adding an estimated road space of 33 per cent. of the existing area to the metropolis. The traffic problem will not then seem so pressing. The scheme has a humanitarian and a medical interest, in that its accomplishment will lessen the work of the hospital accident and casualty department, where a large proportion of the serious street injuries dealt with are occasioned by vans and other slow-moving, heavily laden vehicles. The method which it is proposed to adopt is the establishment of a single large depôt or "clearing house," accessible for all railways by underground tunnels, and from the port by means of a tunnel connecting a river wharf with the clearing house. The goods received by rail, road, and river would be sorted for delivery by means of ingenious electrical and mechanical

appliances, and would be distributed over the metropolitan area by a number of motor vehicles. The worst feature of vehicular traffic carrying goods is its lengthy occupation of road space, for standing vehicles form a fixed obstacle to all other traffic, and it is this kind of street difficulty which would at once be removed by the employment of the particular pattern of motor van which it is intended to use to serve the goods clearing house. The van would be provided with a detachable "container" which could be hoisted out of the van into a building by means of a crane, and another container loaded with miscellaneous goods for despatch to various destinations substituted. The double operation with the aid of a suitable crane could be accomplished in about four minutes. Sorting at the clearing house is to be accomplished by means of "belts" or moving platforms fitted with electro-magnetic apparatus which enables them to receive or discharge loads which are deposited beside them on suitable magnetic trays or tables, and by means of an instrument called a controller they are able to do this in a way predetermined by the operator. The result is achieved by the use of reciprocating roller magnets which revolve at the same speed, one set being fixed at the station, the other set being carried by the moving platform. An undertaking of this character and comprehensiveness is one which London might be proud to accomplish. Unlike many private enterprises, this is one which will benefit the public as well as the shareholder, and provide a means of reducing the congestion in our streets at no expense to the ratepayer—a result which everyone will welcome.

ACUTE SYPHILITIC MENINGITIS.

THE change in view point from which the modern observer regards the relation of syphilis to diseases of the central nervous system is reflected in the general review which Dr. Marcel Miriel gives in the *Gazette des Hôpitaux* of Jan. 7th of the recently differentiated nosological syndrome "acute syphilitic meningitis." The inevitable sequel to the acceptance of syphilitic nervous disease as an infection *viâ* the meninges is the correlation of syphilitic meningitis with other forms of meningitis. For 40 years previous to the important researches of Widal, Sicard, and Ravaut on the cerebro-spinal fluid the reality of acute syphilitic meningitis was questioned by many competent observers; but when in the year 1900 it was conclusively demonstrated that cytological changes in that fluid accompanied meningeal reactions to infective agents, it was felt that a diagnostic criterion had been established by the aid of which the genuineness of acute syphilitic meningitis could be effectively proved. Since that date abundant clinical and pathological evidence has been forthcoming whereby it is easy to-day to furnish a text-book description of a definite form of acute meningitis which is syphilitic in origin, and which can be distinguished from acute tuberculous, or septic, or epidemic cerebro-spinal, or any other variety of the disease. In the great majority of cases acute syphilitic meningitis is preceded by cutaneous manifestations of the infection that are particularly severe. Sometimes there is a definite parallelism between the two, so that the meningeal reaction has been described as a meningeal exanthem. It is during or soon after the appearance of the secondary symptoms that meningeal involvement reveals itself, first of all by the prodromal symptoms of headache and insomnia. The former is continuous, diffused, intractable, and subject to nocturnal exacerbations. Occasionally it is so persistent in its severity as to dominate the clinical picture completely. Insomnia is very common, and ought always to be made a matter for inquiry. At this initial stage there may be little else to attract attention, and even when the syphilitic meningitis is established the paucity of its clinical accompaniments is one of its distinguishing characteristics. Stiffness of the neck is less marked than in other varieties of meningitis. Kernig's sign is common. Convulsions are rare. Palsies are very rare indeed, with the exception of the highly important ocular palsies, notably the third nerve. Fever is by no means frequent; in fact, Dr. Miriel considers it is usually transient and has reported a large number of cases in which it has been awanting. The patient is rarely as affected mentally as in the ordinary forms of meningitis; though suffering from severe headache he will talk lucidly of his illness; he practically never has a meningeal facies. Thus acute syphilitic meningitis is characterised by the restricted nature of its symptomatology, although each and all of the accepted symptoms of meningitis may be detected in any particular case; the moderate type is much more frequently encountered than the advanced. In proportion to the degree of the meningeal implication the comparative mildness of the symptoms, apart from the headache, constitutes an important aid to diagnosis. The cerebro-spinal fluid is almost always clear, free from bacterial infection—some observers have found the treponema in it—and under the microscope reveals an abundant lymphocytosis with occasionally a varying degree of polynuclear leucocytosis. The lymphocytic reaction may be found before any clinical symptoms whatever of meningeal inflammation can be detected, and it may persist after these symptoms vanish. Hence the examination of the fluid is of the utmost significance, for its clear and amicrobic character, coupled with the lymphocytosis, is almost pathognomonic. Treatment by repeated lumbar puncture is often of the greatest value. Dr. Miriel has used intravenous injections of one or even two centigrammes of mercury daily with striking success. He merely mentions "606," the matter being *sub judice*, and says little of serum diagnosis.

CANNED GOODS AND THE PUBLIC HEALTH.

THE report which Mr. Otto Hehner, analyst for the county of West Sussex, has recently presented to the county council points out the desirability of legislation dealing with the canned goods trade. During last quarter he analysed seven samples of preserved (tinned) lobster and seven samples of preserved (tinned) salmon for the purpose of detecting the quantity of metal that had been dissolved off the surface of the canisters. The following was the result expressed in grains per pound:—Lobster: 1·28, 0·27, 0·12, 4·47, 0·80, 0·51, and 0·09; salmon, 0·46, 0·21, 0·77, 0·24, 0·51, 0·38, and 0·35. These figures show that preserved (tinned) salmon is preferable to lobster, but Mr. Hehner explains that the quantities of tin dissolved in the salmon are comparatively small, probably because the oil in which the salmon is packed to some extent protects the surface. The quantity of contamination increases with the age of the goods, because the acid juices continue to act upon the metal. In course of time, therefore, all such preserved goods as are capable of attacking tin will contain an important quantity of the metal. Such materials are all meats and fruits; not condensed milk or syrup. The fixation of an age limit seems advisable. The date of packing ought to be compulsorily stamped on each can. It would be easy to ascertain when the maximum tolerable quantity, suggested by the Local Government Board at 2 grains of tin per pound, has been reached, but it would vary with the acidity of the material. The suggestion that the date of packing the goods should be clearly indicated on each can is an excellent one, and one which could easily be introduced. Dr. G. S. Buchanan and Dr. S. B. Schryver, on behalf of the Local Government Board, a year or so ago, were not able to gain any decisive evidence that tinned foods caused bodily harm attributable

to tin salts, but it seems a pity that the simple precaution of lining tins with an innocuous varnish is not very generally adopted.

INFLUENZA AT THE VATICAN.

OUR Roman correspondent writes, under date Feb. 18th:—"Influenza has made a pilgrimage to the Apostolic Palace and has been 'received' by the Holy Father, by Cardinal Rampolla, and by Cardinal Rinaldini. Dr. Petacci, body-physician to his Holiness, was thereafter in prompt attendance, and the Pope, responding to treatment, may now be regarded as convalescent. Exaggerated announcements as to complications, bronchial and other, have been reduced to their proper dimensions by the official press, inspired by Dr. Petacci himself. The postponement of receptions till next week has been *motivé* as a measure of precaution, considering the advanced age of his Holiness, as also the rigour of the season and the danger of infection imported from without. It is from this latter source that the unwelcome visitant has effected admittance, so that until the public health has returned to its normal standard the surveillance imposed at the Vatican on all 'arrivals,' official and non-official, will lose none of its strictness. Meanwhile Cardinal Rampolla's condition causes some anxiety, due to the high temperature and the characteristic pathognomonic signs. Cardinal Rinaldini, too, is not out of danger. For some days confined to bed, he is still feverish enough to require vigilant attendance, as, at no time robust, he has recently betrayed symptoms not conducive to rapid or permanent recovery from infective disease."

RUPTURE OF THE LARGE INTESTINE DUE TO COMPRESSED AIR.

COMPRESSED air is used commercially for a great number of purposes, including riveting, working small tools, blowing away the filings in rapid lathe work, cleaning engines, &c. It is piped round buildings and applied, like water, through a hose under a pressure of from 40 to 125 pounds per square inch. Its use is much more common in the United States than in this country, and it is not surprising, therefore, that the cases recorded in *Surgery, Gynæcology, and Obstetrics* for January by Dr. Andrews, where this medium has been the cause of several fatal accidents, should be entirely of American origin. Dr. Andrews's case was that of a man admitted nearly moribund, cyanotic, gasping for breath, enormously distended. His neck and chest were emphysematous; the abdomen was globular, tensely inflated, and free air could be felt crackling in both groins. The thorax was rigidly set, respirations were 46 to 52, and the pulse was small, hard, 114. The history was that he was using the air-hose to blow the sawdust off his clothes, and that some of his companions, in jest, caught the hose and pushed it towards his nates. The hose had no nozzle; it was an ordinary flexible $\frac{3}{8}$th inch tube, with a pressure of 60–65 pounds. The tube did not get within an inch of his trousers; nevertheless, with the pressure so high, the column of air several inches in advance of the tube was sufficient to force the anal sphincter as if it had been a solid body. With this history to guide them the surgeons attempted to relieve the pressure by passing a rectal tube. This, however, gave no relief, and accordingly the abdomen was opened, a puncture wound being made in the middle line in front. There was an immediate rush of gas, the abdomen was allowed to empty itself gradually, and the condition of the patient improved so much that an exploratory operation was considered safe. Five hours, therefore, after the accident the abdomen was opened. It was then found that the peritoneum was soiled with fæces, and that the sigmoid flexure was ruptured along its convex border for nearly six inches. The tear was mainly in the serous, muscular, and fibrous coats, the underlying mucous membrane bulged and was torn in three places, showing that it had herniated through the tear in the fibrous layer, ruptured, and then retracted. The ruptured portion of the sigmoid was excised, the ends inverted, and a lateral anastomosis performed. The patient was treated by continuous saline irrigation, and gauze drains were inserted for a few days. Eventually he recovered. Since his attention was thus drawn to the condition, Dr. Andrews has been able to collect details of 15 more cases in the practice of American surgeons, and several useful conclusions can be drawn from them. The air-hose is not dangerous in itself, turned on most parts of the body it produces a stinging effect only. The accidents seem almost wholly to have been due to other employees turning the hose, as a practical joke, towards the victim's anal region. It need not be applied directly to the anus, and the fact that the victim is wearing his clothes is no protection. The nates form a hollow cone of which the anus is the apex, and compressed air expanding in this cone forces the anus without direct application. The bursting-point of the large intestine is probably from 6 to 10 pounds when *in situ*. The rupture is most common in the sigmoid, probably because it is the first unsupported portion of large intestine reached, and also because the rushing air is confined momentarily in the loop. Rupture is, however, sometimes multiple; the splenic flexure has been found the first portion torn, and in one remarkable case that died the sero-muscular coat from the rectum to the cæcum was split, but the mucous membrane though herniating through had managed to remain intact. With regard to the mortality, this, as might have been expected, is at present very high. Of the 16 cases recorded, 13 died. Of these, 7 were submitted to an exploratory laparotomy, with 4 deaths. On the other hand, of the 9 not operated on, all died. None of the cases appear to have been diagnosed apart from the history. Several were treated as "colic" till the details were extracted. It is probable, however, that in future, now that the characteristic features of the condition have been emphasised, diagnosis will be more accurate, and operation, therefore, more rapidly decided upon.

THE LIGHTING OF SCHOOLS.

AT a meeting of the Illuminating Engineering Society held on Feb. 16th a discussion on the lighting of schools was opened by Dr. James Kerr, medical officer (education) to the London County Council, and Mr. N. Bishop Harman, oculist to the London County Council Education Department. The former confined himself to daylight illumination and described methods for obtaining measurements of sufficient accuracy to ensure good illumination in the worst lit parts of the rooms. He dwelt upon such details as the relation of window area to floor space, the colour of the walls, the disposition of the desks, the elements concerned in retinal and mental fatigue, and so on. Mr. Harman dealt with artificial lighting. He described his experience in visiting various London schools, and emphasised the need for properly designed shades so as to screen the eyes and throw the light where it was wanted, and distribute the light uniformly over the desks and the blackboard. He showed by means of diagrams how different arrangements of lights enabled this to be done, and how glare in the eyes of the children and inconvenient shadows could best be avoided. The President, Professor S. P. Thompson, in his opening remarks, pointed out the good work that was being done by the Illuminating Engineering Society in bringing together the lighting engineer, the architect, and the medical officer, all of whom

ought to have their voice, and coöperate in arranging school lighting. A feature of the discussion was the presentation of the results of a series of measurements of illumination in typical schools in London. At the next meeting of the society on March 14th the more technical aspects of school lighting will be dealt with, and further data gathered in a large number of schools and colleges will be presented.

THE TRANSVAAL MINING COMMISSION.

THE late Transvaal Government in 1907 appointed a Commission to inquire into mining conditions generally in the Transvaal. Although the Commission submitted its final report in March, 1910, it has only recently become accessible. Its findings in the main are very sound, but all its views will not be accepted by the medical profession, particularly the very low estimate of air-space—200 cubic feet—which is considered sufficient for a native living in a "compound." Nothing can be better than the recommendations of the Commission on the matters of a constant supply of clean water for laying the dust of mining operations, the erection of proper shelters at the shaft-head for underground workers and the prohibition of erection of back-to-back dwellings, and the laying down of a standard of purity for air in the mine-workings.

CANCER DEATH-RATES: A STATISTICAL STUDY.

WE have received from Mr. G. D. Maynard, F.R.C.S. Edin., of Pretoria, a reprint of his paper on the Statistical Study of Cancer Death-rates, which has appeared in our contemporary *Biometrika*. The etiology of cancer is still a mystery. We therefore welcome Mr. Maynard's present contribution, which approaches the subject from the statistical side, and is based on data not ordinarily accessible in this country. The writer admits, *in limine*, the imperfections that are inherent in death-rates not based on post-mortem examination, but he questions the wisdom of disregarding them entirely as valueless because of their lacking absolute correctness. One must remember, he insists, that in dealing with large masses of figures the errors in excess tend to compensate for those in defect, wrong inclusions in a group in this way counterbalancing accidental exclusions. In this connexion Mr. Maynard appropriately suggests that the value of death-returns would be greatly enhanced if the registrars would add separate tables of the causes of death concerning cases in which the diagnosis has been confirmed by necropsy. In opposition to the theory that much of the undoubted increase in the recorded mortality from cancer is due to improved diagnosis, the writer points out that when the occupational cancer-rates are examined the wealthier classes, although better provided with skilled medical aid, and therefore, presumably, undergoing a stricter process of diagnosis, show the lowest cancer death-rates, while distinctly higher rates are observed among the labouring and agricultural classes. This is the reverse of what might have been expected if the explanation were the true one—that better diagnosis accounts for the increased rate. When first approaching the study of the present problem the writer tells us that, in spite of the trend of modern research, he inclined to the view that the infectious nature of cancer might eventually be demonstrated and that it was either bacterial or protozoic in nature. But subsequently finding that the theory of infectiousness gained no support from his investigations it occurred to him to correlate the rates of cancer with those of diabetes mellitus, the reasons for this decision being as follows: (*a*) the etiology of both diseases is obscure, and they have similar age-distribution; (*b*) they stand almost alone as being on the increase, whilst practically all other diseases show a decrease. The whole essay is replete with formulæ and with tables too numerous for insertion here, and we hesitate to publish a portion of them only for fear of confusing our readers. For full consideration of the statistics we must therefore refer to the original paper.[1] At present we content ourselves with indicating some of the conclusions at which the writer has thus far arrived, and we join him in expressing the hope that the publication of the paper may encourage helpful criticism, and thus enable future work to be more profitably planned. The more important of Mr. Maynard's conclusions are to the following effect: (*a*) That the statistics already dealt with by him give no support to the suggestion that cancer is of infectious origin; (*b*) that whatever theory as to the causation of cancer is adopted some explanation is required of the remarkable correlations between cancer, diabetes, and insanity; (*c*) that the following may be suggested as a probable explanation of the facts as disclosed by statistical analysis—viz., that conditions of modern life, acting on physiologically unsound material, may account for the correlations existing between these three diseases—correlations which are not fortuitous or due to erroneous observation. The increasing mortality of cancer may also be accounted for in the same way.

THE TYRANNY OF THE TELEPHONE.

BEFORE the introduction of the telephone it was the general habit of medical men to permit no interruption of a consultation for anything short of an imperative necessity. Once the patient was in the consulting room the practitioner's undivided attention was given to that patient until the close of the consultation; and trivial messages and communications had to wait until the medical man was at liberty to attend to them. Now, however, with the telephone on every desk it is no uncommon thing for a consultation to be frequently interrupted while queries are answered from some other patient, or appointments made, some of which may even have no bearing on professional work at all. Many patients resent this, and we think not unreasonably; and in the matter of one well-known consultant formal complaint has been made to us. Surely it would be more fitting on the part of consultants to entrust the telephone during consultation hours to an assistant who could decide whether messages should be brought immediately under the notice of his principal, or should await the termination of a consultation in progress, as in former days verbal messages, notes, or callers had to do. The situation is not so common in the routine of general practice, and here it may be to some extent inevitable, but as far as possible it should be guarded against. Urgencies are no more urgent to-day than they were then; while trivialities should not be allowed, because they are discussed by telephone, to assume a precedence which would be denied to an attempt to intrude them by verbal message, note, or personal interview.

THE GENERAL INFIRMARY AT LEEDS.

ELSEWHERE in this issue we print the report of a meeting of the citizens of Leeds at which it was decided to take steps to commemorate the reign of His late Majesty King Edward VII. by raising a fund for the purposes of the General Infirmary at Leeds, which stands urgently in need of £150,000 for extensions and for maintenance. In the early days of the Leeds Infirmary the claim which it had upon the public for support was the moral one—that which the sick poor have always upon those who are better off; but to this are added to-day the claims of an institution to which few families in Yorkshire do not owe a

[1] Biometrika, vol. vii., No. 3, April, 1910. Cambridge University Press.

personal debt. With her infirmary and medical school, now part of a great University, Leeds may fairly claim to have played an important part in the progress which has been made in medical and surgical science in recent years, and to be capable of taking her full share in the work of the future. Whether, therefore, Yorkshiremen are guided by enlightened self-interest, by feelings of devotion and loyalty to the memory of the late King, by the more enduring and deeper feelings of sympathy with the poor and needy, or by the desire to repay the infirmary for benefits received, there can be no more worthy manner of expressing these feelings than by a ready and adequate response to the appeal which is being made to them on behalf of the Leeds General Infirmary by the Lord Mayor of Leeds.

LIFE ASSURANCE MORTALITY RECORDS.

THE records of life assurance offices contain a mass of data bearing on the incidence of fatal disease which is seldom made available for the purposes of general medicine. At the last meeting of the Life Assurance Medical Officers' Association on Feb. 1st a paper was read by Dr. R. Hingston Fox on Mortality Records of Assured Lives. A schedule was submitted for use in the offices upon which all deaths could be entered according to the cause and the age attained. In the discussion which followed the reading of the paper opinions differed as to the use of such records in practical life assurance work, but their value in general medicine was acknowledged. The construction of the detailed schedule of diseases followed the lines of the Bertillon list, modified and expanded for the purpose. This list, which has just been adopted by the Registrars-General of the three kingdoms, has not given unmixed satisfaction to pathologists, as our own columns have shown.[1] Sir John W. Moore is not alone in his grave doubts of the expediency of putting back among local disorders the infective diseases which the Royal College of Physicians of London had placed with their epidemic congeners. On the other hand, there is an obvious and strong motive in conforming to a list which has now been accepted by nearly all the civilised countries of the world as is the case with that of M. Bertillon.

A SMART little outbreak of small-pox has taken place in the Mile End Union area, the first case being diagnosed in the Mile End Infirmary.

THE Morison lectures on Melancholia (the depressive phase of manic-depressive insanity) will be delivered before the Royal College of Physicians of Edinburgh by Dr. George M. Robertson, on March 6th, 8th, and 10th, commencing each day at 5 P.M.

THE hearing of the action brought by Mr. C. R. Thomas against Mr. H. A. Barker, bone-setter, of Park-lane, for damages for negligence in the performance of operations, which were alleged to have led to the amputation of the plaintiff's leg, resulted in the verdict of a special jury for the plaintiff for 20 guineas, judgment and costs being given accordingly

[1] THE LANCET, Jan. 21st, 1911, p. 189.

MEDICAL SOCIETY OF LONDON.—Dr. F. S. Palmer's paper on "Traumatic Neuroses and Psychoses and their Medico-Legal Consideration," which should have been read before this society on Feb. 13th, was postponed. It will be read on April 10th, when papers will also be read by Dr. F. Parkes Weber and Dr. C. W. Chapman.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The 10-h.p. Four-Cylinder Darracq Two-Seater.

ALTHOUGH for four-seaters the modern tendency to employ engines of a very low power is somewhat overdone, there is no doubt that for a two seater a low-powered engine is the ideal, and therefore this car, the latest production of a firm which has always given attention to the needs of the profession, is worthy of attention as a car for professional use. The engine has four cylinders, cast *en bloc*, with a bore of 68 mm. and a stroke of 120 mm., and as a result of this long stroke the pulling power is good. It also has this advantage, it comes under the £1 11*s*. 6*d*. tax. The valves are all on one side and operated by an easily withdrawn cam shaft. Ignition is by a Bosch high-tension magneto, but though this rarely gives trouble, I must say I prefer a dual method of exploding the mixture, which on this type can be fitted as an extra. If a plug is scoted or fails it is easier to use the switch than the spanner. The firing point is fixed, and thus all ignition timing levers are dispensed with, and with a car of this power the want of a method of altering the ignition point is not felt. Cooling is assisted by a fan placed behind the radiator, and the water is circulated by a gear-driven pump. The water-pipes are of generous size, and the clips used for gripping the rubber tubing are satisfactory. This is, I know, a small point, but from experience I have found out how essential it is that these little accessories should be perfect. To have to fix a broken rubber hose with string or copper wire is worrying, and the advantage of substantial water-pipe clips, like other trifles that are not always found on cheap cars, is great. Lubrication is by a plunger pump in the base chamber, which can easily be withdrawn by unscrewing a plug in the bottom of the crank-case. An oil tank is fitted behind the dash under the bonnet, and in view of the driver on his side of the dash is an adjustable sight drip, which regulates the amount of lubricant delivered. The carburettor is of the latest Darracq type, it is very simple, and permits of the jet being withdrawn in a few seconds. From the float chamber to which the petrol comes by gravity, the jet projects at right angles, and over the latter is the choke pipe that conducts the mixture through a foot-controlled throttle to the inlet valves. So many carburettors are a source of worry, that I welcome this type, as with it complications seem impossible. It is also economical, as I found the car do from 25 to 27 miles to the gallon of petrol, and another characteristic is the ease with which the engine can be started, even the first thing on a frosty morning, after the car has been standing all night. The transmission is by a leather-faced cone clutch with spring buffers to a gate-controlled gearbox, provided with three forward speeds and a reverse, and then by a Cardan shaft with two universal joints to the usual live axle. I had the opportunity while at Walnut Tree Walk of seeing one of these taken to pieces, and was greatly impressed by its simplicity and strength; the differential, too, appeared a sound engineering job, and provided that plenty of grease and oil is placed in the crown wheel casing, these parts should be free from breakdown and, what is more, have a very long life. A thrust ball-bearing is fitted on the crown wheel, otherwise the bearings are of the plain kind, and provided that during the first few runs plenty of grease is supplied to the shafts, to which the back wheels are fixed, they answer very well. On the trial car lent me, I found these bearings, even after an 80-mile run, perfectly cool. The front wheels also run in plain bushes, grease cups providing ample lubrication. The steering gear is of the irreversible pattern, and I found it easy to use and quite free from any loss of motion between the hand wheel and the steering axle. Three brakes are supplied, one pedal applied, acting on the Cardan shaft, and two others controlled by the hand lever, and taking effect upon the back wheels. All are of the internally expanding variety and well provided with means of taking up wear, and designed so that when required new shoes can easily be fitted.

A good many objections have been made to accelerator pedal control, but this has always been because it was in an uncomfortable position; here it is in the most convenient place, with the result that I am sure all will be satisfied with this

easy method of control. I took the car from Walnut Tree Walk and drove through the City. There are occasions on driving a small car in traffic when the engine, after a halt behind slow-going vehicles, falters if asked to pick up again on the top speed; this was not in evidence with this car. In fact, the nicety with which it could be controlled and the refined manner in which the power was developed, impressed me greatly, and certainly gave me the impression that it was an ideal mount for the doctor who drove himself. And yet I had a bad night's rest as a consequence of my drive. While in the Commercial-road there was a halt in the traffic, in front was a van, behind me another, and on each side more vehicles; the brakes stopped the car at once, but I was hemmed in, with the result that when the front van backed the test car's front mud-guard acquired a fantastic and morbid form. The fault was, of course, not mine, and as I was not sure if Messrs. Darracq had insured this car I dismounted to obtain the usual particulars in view of a possible action for damage; this entailed the presence of the police, and later on I heard that they wanted the name of the car owner, and then I discovered that as I was driving with trade numbers, if the car was not entered in the firm's books as lent to me for a trial run they might have been summoned and perhaps fined. Of course, on the following day I ascertained that Messrs. Darracq had complied with all the requirements of the law. Still, this incident resulted in a sleepless night, during which I had time to reflect on the worries of my amateur calling as well as the need for insurance for cars likely to be used in traffic.

I took the car to Orpington, where I showed it to a medical motoring friend, and together we found some hills, which not only by their steep gradient, but by their unexpectedness and many twists, forced the vehicle to do its best, and in every way it was a very good best. With three up it climbed a hill of 1 in 6, and on this hill either set of brakes held it in both directions. Of course, what a prospective owner wants to know is whether the low cost makes its presence felt in any detrimental manner that might lead to wear of important parts, or breakdowns. From my test I am of opinion that cheapness had not been obtained at the price of quality, and that the car can be relied upon to give good results, and is well calculated to satisfy those needing a first-class machine that is essentially economical as regards initial and working costs; but, of course, as in the case of expensive cars, the parts must be kept lubricated and adjusted, especially the plain bearings. This is easily done, and anyone should be able very quickly to acquire the knowledge of how to do it. It is with a small car that most owners become experts in keeping it "tuned up," for whereas with, say a 50 or 60-h.p. the driver can afford to run it in an enfeebled condition, it is not so with a low-powered car, that naturally grumbles when it has to work under disadvantages; a 60-h.p. might go on two cylinders or with leaky valves, or two sooted plugs, a 10-h.p. would, anyway, not climb a hill when so handicapped. The car is turned out with a victoria hood and front screen, and with added side doors is comfortable and practically weather-proof.

Gold Reflectors for Lamps.

Messrs. Brown Brothers, Limited, have introduced a gold reflector for use in connexion with their Autoclipse lamps. This projects an agreeable warm-coloured light and in misty or foggy weather has certainly advantages over the ordinary silver variety. It can be fitted without much expense to old lamps.

The Modern Methods of Setting Motor-Car Springs.

The comfort of the occupant of a motor carriage depends chiefly on how the car is sprung, and this almost wholly consists on how the springs are set. In the earlier days each leaf of a spring was tempered and set so that before the load was received the distance between each component leaf was the same and corresponded to about the thickness of the most powerful leaf, each leaf, of course, only touching its neighbours at the ends. The longest plates have necessarily the most pull or "nip," and the up-to-date method is to have the distance between each plate graduated, commencing with a distance equivalent to the number of the plates mutiplied by the thickness of the top spring-plate and terminating with practically nothing at the bottom. Those who have old cars, which leave much to be desired in the matter of softness in riding, can by having their springs reset in this way by a capable coach-smith greatly improve the riding of their cars. I recently had the opportunity of a chat with a rather famous coach-smith who had by so doing completely eradicated the jog bumpiness of a friend's car. He complained rather bitterly of the hard lot of the spring, which because it seldom broke received no care. He advocated the taking down once a year of all carriage springs and of cleaning and greasing each plate; especially if they had been subjected to any undue stress, such as may occur through a severe jolt or collision with, say, a curb or bank, he thought that they should be reset, for the use of a dislocated spring may lead to a disaster.

The Fitting of Speedometers.

The question whether these useful accessories should be fitted by means of gears attached to the front wheel, or driven by a band off a split pulley attached to the Cardan shaft has been the subject of various letters which I have received from colleagues. Both methods are said to be satisfactory, but I certainly advise the former, although it is slightly noisy. When a belt is employed there is always the likelihood of slip and then inaccuracy.

Should a Sprag be fitted?

The answer, I think, is in the affirmative. Those who drive, I am sure, appreciate, when on a hill, being able to start the car without the worry of letting the clutch in just as the brake is taken off. In addition to being of use when after a stop on a hill the climb is continued, it is a sort of moral support to the driver, if new at the work, to know that it is there and down, and that, if in changing speeds he should miss his gears, there will be no backward movement. The old-fashioned variety hinged at its upper end to some part of the frame, with a keen chisel edge for the ground-striking extremity, has many advantages and is less likely to suffer derangement than the pawl and ratchet species.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Medical Attendance as an Emolument.

THE General Purposes Committee having asked the Council to decide whether the emolument of "medical attendance" allowed to certain officers included medical or surgical attendance of an extraordinary kind—for example, a surgical operation, the following regulation was adopted. The words in italic were inserted in the General Purposes Committee's recommendation at the suggestion of the chairman of the Fire Brigade Committee:—

> Officials and employees who receive as an emolument medical attendance shall be entitled to receive advice and treatment by the medical officer under whose care they may be placed by the Council, but, except where *special treatment is necessitated by circumstances due to the nature of the occupation, or where* the Council considers that the particular circumstances of any case warrant special treatment, the Council will not provide special medical advice or any treatment other than that which can be given by such medical officer at the institution of the Council in which such official or employee is residing if in residence at an institution, or, if not in residence at an institution, then at the ordinary place of residence of such official or employee.

Lunacy Statistics.

The Asylums Committee has reported that the returns furnished by the clerks to the London boards of guardians and the information available in regard to London county asylums showed the number of lunatics under certificate on Jan. 1st, 1911, to be 26,845, as compared with 26,377 on Jan. 1st, 1910, an increase of 469. This, though greater than the increase recorded in 1910—namely, 84—might be contrasted with increases of 678 in 1909 and 403 in 1908. The average annual increase during the last 21 years of lunatics for whose accommodation the County Council was responsible was 479.

OLD-AGE PENSIONERS AND MEDICAL RELIEF.—At the last meeting of the Okehampton (Devon) board of guardians the clerk stated that every old age pensioner is not entitled to medical relief. He added that some of them had £400 in the bank. The relieving officer remarked that he should give medical relief to any old age pensioner, unless the applicant had sons who were in a position to bear the cost of medical attendance.

THE LANCET RELIEF FUND.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir THOMAS BARLOW, Bart., K.C.V.O., F.R.S., M.D. Lond.), the President of the Royal College of Surgeons of England (Mr. HENRY T. BUTLIN, D.C.L., LL.D.), the President of the General Medical Council (Sir DONALD MACALISTER, K.C.B., M.D. Cantab., LL.D., D.C.L., F.R.C.P. Lond.), and the EDITOR of THE LANCET (S. SQUIRE SPRIGGE, Esq., M.D. Cantab.), with Sir JOHN TWEEDY, LL.D., F.R.C.S., as Honorary Auditor.

Almoners.

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

Scope of the Fund.

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

Chronic Cases Ineligible.

"We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be benefited permanently thereby.

Twenty-second Annual Report of the Almoners,

For the year ending December 31, 1910.

IN presenting their Twenty-second Annual Report, the Almoners have to record that the balance in hand on Dec. 31st, 1909, was £332 1*s.* 2*d.*, to which on Jan. 5th, 1910, the Proprietors of THE LANCET added the sum of £300, making, with £2 10*s.* repaid on loans account, a total sum of £634 11*s.* 2*d.* available for grants during the year 1910.

The number of applications for assistance received by the Almoners during the year was 32, of which number 5 were declined by the Almoners after due consideration; 7 application forms were not returned—doubtless owing to the applicants realising that their cases were not of a nature qualifying them to receive assistance from the Fund; and 20 applicants were relieved by gifts or loans of money ranging from £2 10*s.* to £30. The relief of these 20 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £307 10*s.* The total amount voted by the Almoners since the commencement of the Fund is £6661 16*s.* 3*d.*

The Almoners have received many expressions of gratitude for the assistance which they have afforded to applicants—in some urgent cases the relief being given within a few hours of the application being received. An example of this promptitude was Case No. 842, which was considered and helped within two hours of the appeal being made to the Almoners. The timely help of the Fund has enabled more than one applicant to keep his practice together when pressing claims threatened to destroy his home and his means of livelihood; and the widow and the orphan have also been helped at the moment of their greatest need.

Sir Thomas Barlow, Bart., K.C.V.O., F.R.S., M.D. Lond., having succeeded Sir R. Douglas Powell, Bart., K.C.V.O., as President of the Royal College of Physicians of London in March last, thereupon became an Almoner of the Fund, and kindly consented to act as such. The Almoners desire to record their warm appreciation of the valuable services rendered to the Fund by Sir R. Douglas Powell during the period of his Almonership.

In conclusion, the Almoners would point out that they will

at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund, but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides*, as well as of the suitability, of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications.

(Signed)
THOMAS BARLOW. HENRY T. BUTLIN.
DONALD MACALISTER. JOHN TWEEDY.
S. SQUIRE SPRIGGE.

Feb. 6th, 1911.

THE LANCET RELIEF FUND.

STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1910.

DR.	£	s.	d.
To Balance at the London County and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1910 ...	332	1	2
,, Proprietors of THE LANCET, Jan. 5th, 1910 ...	300	0	0
,, Repayments on Loan :—			
Case No. 844...	2	10	0
,, Cheque unpresented :—			
Case No. 868...	12	0	0
	£646	11	2

CR.	£	s.	d.	£	s.	d.
By Loans :—						
Case No. 843	25	0	0			
,, 844	10	0	0			
,, 847	10	0	0			
,, 851	8	0	0			
,, 861	25	0	0			
,, 866	25	0	0			
				103	0	0
By Gifts :—						
Case No. 839	20	0	0			
,, 840	30	0	0			
,, 841	5	0	0			
,, 842	15	0	0			
,, 855	15	0	0			
,, 857	15	0	0			
,, 858	25	0	0			
,, 859	15	0	0			
,, 862	10	0	0			
,, 863	20	0	0			
,, 864	10	0	0			
,, 865	10	0	0			
,, 867	2	10	0			
,, 868	12	0	0			
				204	10	0
,, Bank Charges : Cheque Book				4	2	
Balance at Bank, Dec. 31, 1910 ...				338	17	0
				£646	11	2

I find by the Banker's Book that the actual Balance on Jan 1st, 1910, to the credit of the Fund was £332 1*s.* 2*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 5th, 1910. The balance at the Bank on Dec. 31st, 1910, was the sum of £338 17*s.* 0*d.*

I have examined this statement and compared it with the Vouchers and Bank Account, and find same correct.

Jan. 30, 1911. JOHN TWEEDY, Hon. Auditor.

EXHIBITION OF FRACTURES.—On the occasion of the Third Congress of the International Society of Surgery which is to be held at Brussels from Sept. 26th to 30th, 1911, it has been decided to hold an Exhibition of Fractures. Exhibits intended for the exhibition must reach the Secretary-General, 75, Avenue Louise, Brussels, from August 20th to 31st, who will return them at the end of the Congress. Specimens of every kind as well as documents relating to the study of fractures may be exhibited, notably (1) pathological specimens (various types of fractures and rare fractures); (2) radiographs, drawings, plaster casts, moulds, &c.; (3) apparatus for bloodless treatment (including apparatus for immobilisation, extension and ambulatory treatment); and (4) specimens and documents relative to osteosynthesis. Non-members approved by the international committee, for which approval the secretary-general will arrange, are invited also to take part. The sessions will be arranged so that exhibitors will be able to show their exhibits to the members of the society during the Congress, and subjects will be placed at the disposal of those who require them. Arrangements are being made for special reductions in the railway transport rates, as was the case with the Cancer Exhibition. Professor J. Lucas-Championnière is the President of the Third Congress, and Monsieur A. Depage is the secretary-general. Monsieur L. Mayer is the secretary of the Congress. Forms of application may be obtained on request.

MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.

I.—HISTORY OF ANATOMY.

IN our issue of Feb. 11th we referred in general terms to the new edition of the Encyclopædia Britannica and to the manner in which the special requirements of the medical profession were provided for. It is our intention in this and succeeding issues to consider more in detail the various articles in the Encyclopædia which deal with medical subjects. Medicine is dealt with as a whole in one article, which has not yet been issued, but the volumes contain a number of articles dealing with the causes, symptoms, and treatment of specific maladies. Among the contributors in the field of Medicine and Surgery are Sir Clifford Allbutt, Sir Lauder Brunton, Professor Robert Muir of Glasgow, Professor Sims Woodhead, Sir John Broadbent, Mr. Edmund Owen, and Mr. Stephen Paget, while Mr. F. G. Parsons has written the article on Anatomy which we deal with below, and has also planned the treatment of the subject throughout the volumes upon a comparative method.

Of Mr. Parsons's contribution we may say that the method of arrangement in this edition shows a marked contrast to that of earlier issues. The whole subject has been broken up from two articles into about 30, the anatomical descriptions of various parts of the body being found under such respective headings as arteries, heart, ear, eye, liver, skull, urinary system, &c. This arrangement has the advantage for the general reader of throwing all the information given about one organ or group of organs into one chapter—in effect a treatise on the biology of certain organs or functions. For a book of general reference this method is undoubtedly sound. The article on "anatomy" is therefore limited to an historical sketch and a few pages on the artistic aspect of the subject with which we are not concerned. The historical *résumé* forms a valuable monograph throwing important lights on the growth of scientific thought.

The history of anatomy as known to the Græco-Roman world is so far crystallised that it has not been deemed necessary to alter in any substantial details the article written by the late Dr. Craigie of Edinburgh for the ninth edition of the Encyclopædia. The number of extant authorities is small, and their writings have been submitted to minute criticism for at least three centuries. But the number of extant writers does not represent the sum total of workers in the anatomical field. Anatomy was a small excrescence on the art of healing, and that art was an hereditary priestcraft, handed on in families of distinction, attached to well-known temple shrines. Such was the family of the Hippocrates, for seven members of the race of the Heracleidæ bore this name in the Island of Cos, the "Father of Medicine" himself being Hippocrates the Second. We may reasonably look for future light on the origins of medicine in Crete when we remember that the Ionian population of the north-eastern Ægean was thrown out from the Mycenean cities of the Peloponnesus under the stress of the successive wars of the Dorian invasions. A curious hint is also afforded by the fact that the earliest anatomical treatise extant is an Egyptian papyrus of the sixteenth century B.C., at the probable zenith of the Minoan civilisation in Crete, just 200 years before the "destruction of the Palace" and the dismemberment of the great Cretan Empire.

It is undoubtedly wise not to attach too much importance to Hippocrates and his school as authorities on anatomy, in spite of the encomiums bestowed upon this branch of attainments by enthusiastic and learned admirers. His knowledge was necessarily defective owing to the impossibility of dissection, for the Greek feeling of respect for the dead offered a bar to its practice as complete as that presented ten centuries after by the Moslem religion. This estimate of Hippocrates' anatomical knowledge is confirmed in the short biographical article under his name from the pen of Sir John Batty Tuke. Hippocrates was one of the master minds of the world, a mind which was part of the huge intellectual output of post-Mycenean Greece, part of an output certainly never surpassed and possibly never equalled. Whatever his defects in anatomy may have been he remains a master at the bedside; Laennec admitted that Hippocrates had taught him "l'auscultation immédiate." If not the first to hold, he was the first to express, the conviction that diseases must be scientifically treated as subject to natural laws, however they may be regarded from the religious point of view. Nor was he anxious, as the author reminds us, to maintain the connexion between philosophy and medicine, for, according to Celsus, Hippocrates of Cos was "*primus quidem ex omnibus memoria dignus, ab studio sapientiæ disciplinam hanc separavit, vir et arte et facundia dignus*" (De Medicina). The article closes with a valuable note on the Hippocratic collection and the reasons for accepting some of the treatises as genuine and others as not so. There is no difficulty now in assigning a proper portion of the various Hippocratic writings to the great physician of Cos, for few writers have been exposed to such continuous criticism in the course of many centuries.

It is unnecessary to reclaim the title of the Father of Medicine. The treatise Περὶ ἀέρων, ὑδάτων, καὶ τόπων (Airs, Waters, and Places) is always the first treatise on public health. There is little to be said anew on such a hero of medicine, but the remark that Hippocrates advocates the use of the trephine with more boldness than the experience of later times has warranted, may suggest that the operation was still a survival of a practice of the Neolithic age. Among the followers and pupils of Hippocrates the most noted is his son-in-law, Polybius, to whom has been ascribed the whole of the book on the "Nature of the Child," and most of that "On Man." There is abundant anatomical matter in both, largely grotesque and inaccurate. The opinions of Syennesis of Cyprus and of Diogenes of Apollonia have been preserved for us briefly by Aristotle, and they indicate no more exact observation. With Aristotle himself anatomy, as a science based on direct observation, really began. The first three books of the "History of Animals" survive out of ten, and the four books of the "Parts of Animals." From them we learn that the errors of the three writers given above on the subject of the distribution of the blood-vessels were becoming recognised. Though Aristotle distinguished between arteries and veins, he confused the vena cava and the pulmonary artery.

The error, which died so hard and so late, that the arteries were air-vessels appears to have originated with Praxagoras of Cos, the last of the Asclepiadæ. The article before us seems to imply that Diocles of Carystus followed Aristotle in date; it was usually supposed that Diocles was a contemporary of Darius Hystaspes, who died in 485 B.C. The real study of human anatomy began in Alexandria during the reign of Ptolemy Soter and his successors. Herophilus and Erasistratus undoubtedly dissected and described the human body and were largely responsible for the high reputation of the Alexandrian medical schools. None of their writings have come down, but sufficient references have been made to them by Galen, Oribasius, and others for us to realise the value of their work. Erasistratus described and named the valves of the heart, the division, cavities, and membranes of the brain, and the folds of the jejunum. Both he and Herophilus described the brain, its shape, cavities, and convolutions, and the latter was the first anatomist to give his name to a part of the body. Mr. Parsons is perhaps wise in not assigning a date to Aretæus, as his exact historical position is not certain, though it was clearly in the first century A.D.

The scanty contributions of the Greek practitioners of the early Empire, who preceded Galen, have received all the attention they deserve. The work of Marinus and Rufus of Ephesus is chiefly conserved in Galen's writings, and with Galen's death in 200 A.D. classical anatomical knowledge ended. Soranus (the anatomist) and Oribasius, Miletius and Theophilus (chief medical officer to Heraclius), strove in vain to wear the mantle. The languid efforts of these compilers did little to improve the standard work carried out and personally recorded by Galen. Whatever value may be claimed for originality of clinical observation on the part of the Arabian physicians, their anatomical learning was borrowed from the Greeks, and Mondinus of Bologna, about 1315, laid the foundation stone of modern anatomy. But even in the Republican cities of Northern Italy the influence of the Church was too strong to permit such original workers as Gabriel de Zerbis of Verona or Achillini of Bologna, at the close of the fifteenth century, to gain a proper hearing in the schools. The infallibility of Galen was a tenet of faith upon which the powers of the Lateran insisted. Even such mental freedom as Sixtus V. afforded to science was a century away. We

recognise, with Mr. Parsons, the immense stimulus which the laborious compendium of Berenger afforded to students of anatomy, a stimulus assisted by the illustrations with which it was furnished. Poor as works of art, these plates were more useful to the student of the day than the artistic but useless drawings of Mondino, or the magnificent studies of Leonardo da Vinci or Albrecht Dürer.

Vesalius has always been claimed as the founder of modern anatomy, and no attempt is made in Mr. Parsons's article to depose him; but the admirable sketch of the work of Jacques Dubois, who was the original master of Vesalius in the science, shows how much the pupil owed. He was not the untaught heaven-born genius that some of his biographers have made him.

From the time of Vesalius to the time of Harvey the names of the greater anatomists seem like the names of the great navigators: they have been attached to bays and promontories, where instead of the titles of Hudson or Magellan we recognise Eustachi of San Severino, Fallopi of Pisa (pupil of Vesalius), Constantio Varoli (physician to Gregory XIII.), Fabricio, who first described the valves of veins, and his pupil, Casserius of Piacenza, with whom closed the illustrious line of Italian anatomists.

Proper space is given to the consideration of the question of provision by the State of subjects for dissection in authorised schools. The necessity of practical dissection was forced upon medical teachers in Great Britain by William Hunter about 1750, with the result that in 1793 there were 200 students studying regular anatomy, and by 1823 the numbers reached at least a thousand. The legalised supply of subjects was confined by a statute of Henry VIII. to the bodies of executed murderers, which happily for morals if not for science was limited even in those cruel days. The practice of "body-snatching" was the natural, if deplorable, outcome of an insufficient supply of subjects. The article under review gives an excellent summary of the difficulties which preceded the passage of the "Anatomy Act" of 1832. There was official opposition on the part of the Royal College of Surgeons of England, whose Fellows were jealous of any advantage which might possibly accrue to private teachers, who formed the majority of the anatomical schools. Other opposition came from parliamentarians like "Orator" Hunt, Michael Sadler, and Sir R. R. Vyvian (then Member for Bristol). Macaulay, in one of his most incisive speeches, illuminated by incidents of mediæval surgery, supported the Bill as one "which tends to the good of the people, and which tends especially to the good of the poor." It is to be regretted that in his final sentence on this subject Mr. Parsons shows that the same sentimentality which influenced Hunt and Sadler in 1832 is influencing boards of guardians to-day; for the Anatomy Act is not compulsory on such boards but only permissive.

Space forbids our entering on a consideration of that part of the article that deals with modern anatomy; suffice it to say that the ground is fully covered and the subject amply treated.

RECORDS FROM MEDIÆVAL CORONERS' COURTS.

(FROM A CORRESPONDENT.)

IN THE LANCET of Dec. 17th last there were discussed some features of the Coroners' Law and Death Certification Amendment Bill, and an outline was given of the history of the office of coroner and the duties of that officer. It was pointed out that the coroner was closely connected with judicial matters, and that therefore in the beginning he might be expected to be a lawyer. To pursue the subject somewhat further, it may be added that the essential function of the early coroners was to guard the rights of the Crown. Criminals were sought out and deaths by violence and misadventure were inquired into, not so much because someone had died or had been killed, but because the death or the crime was a source of revenue to the Crown.

Coroners had a much wider field of inquiry in early days than they now have, for in addition to the duties mentioned in the article in question they were obliged to hear "appeals" or criminal accusations brought by one person against another. The final trial of the causes was reserved for hearing at the "eyre"—i.e., at the visit of the justices on circuit, the term "eyre" being derived from "in itinere." It was the coroner's duty to be present at the eyre; he held an important position, for he was the link between the itinerant justices and the local administration, and so between the Crown and the people. I propose to cite a few cases both from the records of coroner's courts and from those of the Crown pleas at the eyre, between 1200 and 1413, which I think will be found interesting both from a medical and from a historical point of view. Sundry expressions in the reports are somewhat puzzling unless the reader is aware of the procedure, so I have explained technicalities in the course of this article.

To begin with the inquest jury, the composition of this body varied in different places and at different dates, but about the thirteenth century it commonly consisted of representatives from four neighbouring townships—namely, from that in which the death occurred or in which the body was found, and from the three nearest townships. The number of jurymen varied, but was often, as it is now, 12. Persons declared guilty by the jury, those who were present when the sudden death occurred, and the finders of the dead body were all attached to appear at the eyre before the itinerant justices. The finder of the body was not, however, attached if the deceased had received the last rites of the church, because presumably he would then have been able to state who had attacked him. Thus we have the following entry in the coroners' rolls of Northamptonshire:—

> It happened at Little Houghton that Richard le Muleward was found dead on Saturday next after the feast of St. Dunstan in the sixth year of King Edward III. (May 23rd, 1332). An inquest was held before John de Tuwe the coroner on the aforesaid day and year by the oath of twelve jurors who say that Richard quarrelled with two men who killed him. There was no finder because he had the rites of the church.

That is to say, that no record of the finder of the body was kept because Richard had survived long enough to say who were his assailants and to receive the last rites.

The finder of a person feloniously slain had to raise the hue, and one method of doing this was for the finder to inform his four nearest neighbours, who then notified the bailiff of the hundred, who in turn sent for the coroner. At the inquest the chattels of the person indicted were appraised, and the property thus appraised was placed, as a rule, in the charge of the township in which the death occurred, to be accounted for at the next eyre. If the accused was found guilty his chattels were forfeit to the king. Sometimes the only chattel which a murderer possessed seems to have been the weapon with which he committed the crime. Thus on July 2nd, 1410, Richard Barber killed John Taylor with a sword at Weston in Staffordshire. He was found to have no goods or chattels, but the sword was valued at 2*s.*, "for which the township of Weston is to account."

Murder was, as might be expected, a much simpler affair in the Middle Ages than nowadays. Poisoning was almost unknown, or possibly was never discovered as such, for the deaths by violence which are reported in the coroners' rolls are all due to injury by weapon and are often characterised by extreme brutality. On April 23rd, 1271, John Rede, Matilda his wife, and their two servants were sitting at supper in the town of Ravensden in Bedfordshire when certain felons and thieves came to the house. They hit John on the head with an axe and also stabbed him to the heart, so that he died immediately. Then they wounded Matilda in the head, nearly cut off her left hand, and, having heated a trivet, placed her upon it. Having bound the two servants, they despoiled the house and departed, leaving Matilda for dead. One of the servants unbound himself and raised the hue. At the inquest certain persons were ordered to be arrested, Matilda, despite her serious injuries, being able to attend and to give evidence. Our forefathers must have been a hardy race, for they had a wonderful power of recuperation. Witness the following case. At Barford in Bedfordshire, on Oct. 10th, 1271, John of Bretteville was walking with his wife Emma on the King's highway. To them appeared one Simon, who struck John with a sword of iron and steel on the top of his head, on the left side between the parting of the hair and the ear, making a wound 5 inches long, 3 inches wide, and extending down to the brain, so that 13 pieces of bone afterwards came out from the said wound. He also with the sword divided the tendons of the little finger of John's left hand and fractured the third finger of the same hand. Nor did his malice stop there, for he also struck John on the right side of his head with the flat of the sword, many blows which did not bleed

(*orbos ictus et multos*), so that the whole top of his head was excoriated and swelled up and he lost his hearing on the left side. Emma raised the hue, and on the following day she appeared at the county court before the coroner and there said that if her husband recovered he would sue in person at the next county court. Despite his severe injuries John appeared in person at the county court held on Nov. 30th, 1271. Simon was summoned at the following county court held on Dec. 21st, but did not appear. He was summoned again on Jan. 25th, March 21st, Feb. 27th, and finally on April 18th, 1272, John appearing every time. Simon, however, did not appear until the April court, but the record does not go on to say what happened to him.

Another interesting case is that of Henry Costentin, who in the parish of Eaton in Bedfordshire was on Thursday, August 11th, 1267, loading wheat into a cart. His feet slipped and he fell upon a pole of the cart so that the pole went into his fundament. He lived until the following Monday when he died at 6 A.M., having received the rite of the church. A verdict of death by misadventure was returned. The cart, the harness, and the wheat were valued at 6*d*., the horse at 2*s*. 6*d*.

In cases of death by misadventure the deodand was valued and confiscated for the crown. Deodanda was the legal term for any animal or inanimate objects by which a man came to his death. In accordance with its name it was supposed to be applied by the Crown to pious uses—i.e., to be distributed as alms. In an inquest held at Cowly, in Gloucestershire, on the body of a child aged 3 years, by name Robert Fox, a verdict was given that he fell into a pan of milk and was thus drowned. The inquest was held on Sept. 15th, 1396. The pan was valued at 6*d*. Several other inquests deal with the deaths of children from drowning in a well, and the circumstances of the following case are of interest from the point of compensation which would now probably be sought. William and John, both of Goldington in Bedfordshire, had a dispute on Sept. 26th, 1267, concerning some sheep, with the result that William received a wound on the head four inches long. He recovered from this and made it up with John. A little later William had an attack of ague and died, whereupon his wife raised the hue out of spite. The coroner, Simon Ruffus (Read), held an inquest at which Goldington and three other townships were represented. A verdict was returned that William did not die from the wound but from the ague. Nevertheless John was attached.

Inquests on deaths in prison were frequent and throw a sinister light on prison treatment. Thus at the inquest on Robert Rushton, who died in Northampton Castle on March 20th, 1323, 12 jurors say that he died from hunger, cold, and privation. John Swan, who died in the same prison on July 25th of the same year, was found to have died from hunger and the flux. Geoffrey of Steventon, a chaplain who died in the same prison on August 9th of the same year, was found to have died from hunger and thirst. The same was the case with Thomas Philip, Michael Smith, and Roger of Keston, who all died in the same prison.

I have referred above to a case in which 13 pieces of bone were extracted from the skull of a man who had been wounded in the head. But an even more remarkable case was heard at the Cornish eyre of 1201. Here Eadmer of Penwithen appealed Robert and two other men for that Robert wounded him in the head so that 28 pieces of bone were extracted. Robert attended the court and "defended the whole of it word by word." He was, however, sentenced to purge himself by ordeal of iron, and the two others were to be kept in custody until it should be seen how Robert should fare. Despite his injuries Eadmer was present in court. The action appears to have failed, for it is stated that Eadmer afterwards came and withdrew himself "et posuit se in misericordiam de j. marca"—i.e., he agreed to pay a fine of one mark. But that he should have recovered enough to prosecute after such a serious injury is worthy of note, and why he was fined is not clear.

The age was a rough one, but we find no records of such refinements of crime as are found in the criminal records of later days. There is one case noted at the Lincolnshire eyre of 1202, where Thomas appealed Alan for that Alan had taken him by force into his house "et eum tenuit dum uxor ejus (Alan's) abscidit ei unum testiculorum suorum et Radulfus Pilatus alterum"; in this mangled condition Thomas was carried by Alan into the road, where he raised the hue as soon as he could, and the king's serjeant was informed. This official came to Alan's house and "ibi invenit cultellum et testiculos in ciphulo quodam." But as a rule in quarrels or assaults, the simple dictum "when you see a head, hit it" was enough for our forefathers. A study of the volumes containing the pleas and cases upon which we have commented—namely Vols. I. and IX. of the Selden Society's publications—reveals the fact that nearly all the crime in the Middle Ages came under the head of crimes of violence; murder, buglary with or without assault, wounding, rape, and mutilation appear again and again. There are a few instances of petty theft and of cheating by false weights, but the elaborate swindles, the carefully thought-out and planned murder seem to have been unknown. They were reserved for an age in which education, despite all its benefits, may lead the criminally inclined down the road of wickedness no less than the ordinary person up the hill of improvement.

THE HEALTH OF THE ARMY IN 1909.

I.

WITH the publication of the fifty-first volume of the Army Medical Reports we notice that the title of the volume has been changed from "Army Medical Department Report" to "Report on the Health of the Army." A designation that has been in use for half a century cannot be dropped without some slight regret; but as there has been, strictly speaking, no "Army Medical Department" for many years past, the continuance of the old title was an anachronism. The new name is also more appropriate, since, although the work dealt with in the report is almost entirely that of the medical service, it derives its importance from the fact that it relates to the army as a whole. Continuing the practice of his predecessor, the Director-General summarises the chief points of interest in an introductory letter. The improvement in the health of the troops that has been noticeable since the conclusion of the war in South Africa is continued, and for 1909 a considerable decrease is noticeable in the four items of admissions to hospital, average number constantly sick, deaths, and numbers invalided. The following short table shows this clearly; the figures are ratios per 1000:—

—	Admissions.	Constantly sick.	Deaths.	Invalids.
1889–1898	997·3	59·85	9·03	15·36
1904–1908	594·5	35·40	5·47	13·73
1909	504·8	28·86	4·10	8·65

The improvement, when the 1909 figures are compared with the averages of the preceding five years, is seen to be marked under each heading, and if the decennial ratios of the period immediately before the South African war be regarded, the results are in the highest degree satisfactory. The admissions to hospital and the numbers constantly sick are much below the quinquennial average, and are only about half the averages of ten years ago; the deaths are less than half and the invalids but slightly more than half these averages, and are considerably below the averages of the five years immediately preceding the year under review. The statistics for the years 1899 to 1903 are exceptional, owing to the South African war, and are not therefore properly comparable. As explained in last year's report, the decrease in admissions to hospital and in men constantly sick is due in a considerable degree to the introduction of the out-patient system of treatment in 1904, according to which slight cases of sickness are treated in barracks. The reduction in mortality and invaliding ratios is, however, quite independent of this change in medical administration; the figures for 1909 are appreciably lower than those for 1908, and by far the lowest that have yet been recorded.

The total force, amounting to 217,314 warrant and non-commissioned officers and men, may be divided into three groups from a medico-statistical point of view: the troops serving in the United Kingdom, who form rather more than one-half of this number (viz., 110,492); the Army of India (71,556); and the remainder serving throughout the rest of

the empire (35,266). What has been said above about the improvement in the army's health as a whole will be seen to be equally applicable to each of the three main groups into which it is geographically divided.

Ratios per 1000.

—	Admissions.	Constantly sick.	Deaths.	Invalids.
		United Kingdom.		
1889–1898	712·5	41·14	4·32	16·98
1904–1908	454·3	25·87	2·85	16·29
1909	378·4	21·72	2·92	10·51
		India.		
1889–1898	1464·7	89·61	16·43	14·78
1904–1908	839·1	50·68	10·07	11·24
1909	716·9	40·26	6·37	6·35
		Colonies.		
1889–1898	869·6	54·37	8·44	11·24
1909	461·6	28·10	3·77	7·37

The chief causes combining to bring about this improvement in the army's health have, no doubt, been the same as were alluded to in the previous year's report—viz., changes in medical administration; improved methods of treatment in hospital, especially the great increase in operative surgical measures during recent years; improvements in sanitation; and the employment of medical officers as medical inspectors of recruits, which has led to greater care in their selection.

Recruiting.

The number of recruits medically examined has been 50,298; this is a considerable decrease on 1908, when 61,278 were inspected, and is a much smaller number than in any previous year; no reason is suggested for this decrease. The standards have been raised during the year; for infantry of the line the minimum height has been increased from 5 feet 3 inches to 5 feet 4 inches, and the chest measurement from 33½ inches to 35 inches, a range of expansion of 2 inches being required. For garrison artillery the height has been raised 1 inch to 5 feet 8 inches. For departmental corps the standards remain the same, a height of 5 feet 3 inches; chest measurement 33½ inches, with an expansion range of 2 inches. The minimum age is, as before, 18 years, a few special reservists being enlisted at 17. The standard of examination tends to become more uniform year by year, partly owing to the more careful instruction of junior medical officers on joining, and partly owing to the frequent inspections of recruits at depôts by the specially appointed medical inspectors. It is noted that the only question on which there is now any considerable difference of opinion is that of the state of the recruit's teeth in reference to his general physique; facilities for dental treatment are being increased, and the problem will become simplified.

The Director-General considers that the quality of the recruits was, on the whole, satisfactory, and that they would be likely to develop into a good stamp of soldier, with few exceptions, but that they must not be expected to do the work of a seasoned soldier for two or three years at least. The ratio of rejections was 299·04 per 1000, being somewhat higher than in the two years preceding, but lower than the ten-year average of 307·97 (1899–1908). The chief causes of rejection have been, as usual, defective chest measurement (58·27 per 1000), loss and decay of many teeth (54·87), heart disease (33·06), and defective vision (18·35). The rejections for chest measurement, as well as for height, have been in greater proportion this year on account of the raising of the standards. The condition of the teeth of recruits is now receiving attention, and an increased expenditure has been sanctioned for dental treatment; but real improvement is only to be looked for from education of the child in the care of its teeth at an early age. The work that is being done by education authorities throughout the country in this direction must exert a beneficial influence in the near future; but as far as recruiting is concerned, it will be several years before the good effects of preventive dental treatment in schools reach the army. There is no doubt that, as stated in the report, a certain proportion of recruits are able to get good value for the food ingested, and possess an excellent physique, in spite of a low dental efficiency; but, on the other hand, it is quite possible that they would be in even better condition physically if their teeth were in a sound condition; and there are certainly very large numbers of young adults of the age and class in life from which recruits are drawn for whom preventive dental treatment would make all the difference in the world in regard to their physical fitness.

Heart affections have caused a slightly larger number of rejections on first examination (33·06), but fewer within three months of enlistment (1·15). Many of these later rejections are due to disordered action of the heart, which is said to be aggravated, if not induced, by cigarette smoking. It is observed that "there is a possibility, if not an actual probability, that future years may not witness any further marked diminution in these affections as a whole, but that the disease itself and the cause will be changed to another in the same category." This is a cryptic saying which we do not understand. We should have thought, however, that it would not be impossible for military officers to exercise some such control over the young soldiers as would prevent them from injuring their constitutions by excessive smoking. The rejections for defective vision continue to show a diminution, the ratio per 1000 examined being now only 18·35; in the period 1899–1908 the analogous figure was as high as 34·02; the reason is that the method of testing is now by means of Snellen's test types, instead of the test dots formerly in use; the standard required, one quarter of normal vision in each eye, or normal vision in one, and one-sixth in the other eye, cannot be considered too severe.

The determination of the recruit's age in doubtful cases is still "an unsolved problem to the medical examiner of recruits." The main defect of our recruits has always been want of maturity, and in the past year there has been no appreciable improvement in this respect; the quality of the recruits has been, on the whole, satisfactory, and they should develop into a good type of soldier; but it must not be expected that they can "do the work of a seasoned soldier for at least two or three years." We do not think this need cause anxiety; during these two or three years they are being well fed, clothed, and trained; the State gets the benefit of this as well as the individuals. But it must be remembered (though sometimes forgotten by commanding officers) that during these first two or three years they are not capable of doing the work of fully grown men; and it is to be regretted that their services should be lost by discharge so soon after they have reached maturity in bodily development and skill in military training.

Of the total number of recruits finally approved during 1909—viz., 34,731—after deducting those under 18 years of age (3491), the average age was 19 $\frac{5}{12}$; the height was 66·5 inches; the minimum and maximum chest measurements were 33·6 and 36 inches; the range of expansion, 2·6 inches; and the weight, 130·1 pounds. All of these ratios are higher than the 10-year averages, 1899–1908, with the exception of the age, which in the decennium had averaged 20 years. These figures must be allowed to be satisfactory. The system of physical training introduced at the end of 1906 has now become general throughout the army; it is gradually progressive in easy stages, and is designed to develop the body generally, not mainly to increase muscular development, as in the former system of training. Great care is taken in the selection of the instructors and in medical supervision of the gymnastic courses. There is now a fairly general agreement among medical inspectors of recruits that of the lads discharged medically unfit within three months of enlistment it is cigarette-smoking, and not physical training, that causes their disability.

Invaliding.

The invaliding ratio, which was 13·26 per 1000 in 1892, rose to 29 in 1901; for the five years 1904–08 it averaged 13·73; in 1908 it was only 10·32; and in 1909 it fell to 8·65, a much lower figure than has ever before been reported. The chief causes are tuberculous diseases (1·46), nervous diseases (0·91), and valvular heart disease (0·89 per 1000). The most marked reductions have taken place in the group of digestive diseases and in syphilis. Valvular heart disease also, though one of the chief reasons for invaliding, caused only 0·89 compared with 1·57 per 1000 in the preceding

quinquennium; and disordered action of the heart only 0·29 in comparison with 0·56.

Amongst the troops serving at home those quartered in the London District always show more sickness than any others. The ratios for the whole of the troops at home have been stated above. In the London area the admissions were 677, the number constantly sick 40·3, and the invaliding 17·5 per 1000; in the Western Command, on the other hand, these ratios were only 277, 12·9, and 10·5 respectively. Comparing the different arms of the service, the Household Cavalry have the highest admission-rate (654) and the Foot Guards the highest number constantly sick (38·6). The respective figures for Infantry of the Line are 407 admissions and 23·8 constantly sick per 1000. The Foot Guards, however, show a great improvement compared with the corresponding ratios for the past five years, which were 731 admissions and 52·6 constantly sick per 1000; while the Household Cavalry are rather worse this year than their quinquennial average (650 admissions and 25·2 constantly sick per 1000). From a table that is furnished in the report, comparing the death-rates of soldiers with the rates for civilian males, aged 15 to 35, from certain diseases, the advantage appears to be generally on the side of the military. Thus, the enteric fever death-rate was 72 per 1,000,000 compared with 143 for civilians; for tubercle of lung, 273 compared with 1438, and for other tuberculous diseases 40, compared with 211. Alcoholism caused only 24 deaths per 1,000,000 in soldiers, compared with 31 in civilians. Allowance must be made for invaliding, which would discount the apparent advantage in tuberculous diseases, but would not affect enteric fever or alcoholism; these diseases are therefore less fatal in the soldier than in the civilian of similar age.

The most fatal diseases were pneumonia (0·41 death per 1000), tubercle of the lung (0·27), and valvular heart disease (0·18). The diseases causing most sickness were gonorrhœa, syphilis, and soft chancre, which together caused a constantly sick rate of 6·20 out of the total 21·72 per 1000; this, however, is an improvement on the average for 1904–08, which was 7·99. The chief diseases causing invaliding were tubercle (1·74 per 1000), diseases of the nervous system (1·70), and heart disease (1·41); of these the tuberculous group show a slight increase on the quinquennial average (1·69). In last year's report attention was drawn to the need of some coöperation between the military authorities and municipal bodies or charitable institutions possessing open-air sanatoriums, which would offer to men on their discharge from the army some prospect of that after-care and attention which is so necessary if they are to recover their places in civil life as able-bodied citizens. Unfortunately, it has not been found possible, up to the present, to devise any general scheme to this end; but for the Aldershot Command four beds are reserved in the Frimley Sanatorium for discharged soldiers, whose condition gives hope for cure or improvement, on payment of 10*s.* a week, half of which is contributed by the Soldiers and Sailors' Help Society, and half by the regiment. We think, however, that the whole cost of this sanatorium treatment, after discharge from the army, should not fall on the private (or voluntary) charitable resources of the military, whether through regimental agency or the Help Society. Most of the men invalided would become chargeable to the public sooner or later after their discharge; and it seems only fair that the public generally—that is, the civil authorities—should bear some of the burden in the way previously suggested, namely, by allotting accommodation to ex-soldiers in sanatoriums, preferably in the territorial area to which they belong. Diseases of the heart and circulatory system caused nearly as many deaths (0·32 per 1000) as the quinquennial average (0·36); but led to much less invaliding, 1·61 per 1000 compared with 3·09. This indicates the success of the measures now being taken to eliminate heart-strain, as far as possible, from the exercises of the soldier; and especially that the physical training, as now carried on, is in agreement with sound physiological teaching.

Venereal diseases caused 28·6 per cent. of the total amount of sickness; in the decennium, 1891–1900, they caused 31 per cent. The improvement appears to be very slight, but it must be remembered that the *total* sick ratio in that period was 39·52, while in 1909 it was 21·72 per 1000; there is, therefore, really a very considerable reduction in the amount of these diseases. In 1901 there were 847 men constantly sick in hospital with venereal disease, out of a force of 100,811; in 1909 there were 685 men similarly *hors de combat* out of a force of 110,492. There is no doubt that the spread of temperance among soldiers is the chief, though not the only, reason for this improvement. Great variation is seen, as always, in the incidence of these affections. In the London District they caused 160 admissions per 1000, at Aldershot 48, on manœuvres 22. The bad pre-eminence of the London District (that is, the Household Troops) is less marked than in recent years, for in 1907 there were as many as 208 admissions per 1000 for venereal disease, but it is unsatisfactory. None of the specific infectious diseases were prevalent in 1909 except influenza, which caused 18·4 admissions per 1000, but it was not of a severe type.

PLAGUE IN RUSSIA AND IN THE NEAR AND FAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Plague in Odessa.

THE following has been the course of the plague outbreak in Odessa since the date of my last letter on this subject (published in THE LANCET of Jan. 7th, p. 59). In the week ending Nov. 5th 4 cases with 1 death occurred in the town, none in the district round. The totals had then reached 140 cases and 43 deaths. Apparently no further cases occurred in November or December, but on Jan. 11th (Dec. 29th, Old Style) 2 fresh cases were reported. Since then Odessa and neighbourhood seem to have been free from plague. It is noted that some time in November, out of 522 rats caught in the town and examined bacteriologically one was found to be plague-infected.

Plague in the Kirghiz Steppes.

A large number of plague centres seem to have formed in the past few months in various parts of the Kirghiz steppes of the Astrakhan government. On the island of Kuklen, in the second arrondissement of the first *okrug* (circuit) of these steppes 6 cases of plague, all fatal, occurred between Oct. 13th and 30th (Old Style). There were no further cases here in the following week. In the Djalpak settlement (*urotchishtché*), situated in the fourth arrondissement of the second *okrug*, 15 cases of the disease with 11 deaths were recorded between Nov. 1st and 12th. In the Djalpak-Tchagyl settlement (probably the same as the one just named) 20 cases with 19 deaths had occurred by Nov. 15th. One further case was reported here on the 22nd. In the Naurzali-Tchagyl settlement, situated in the second arrondissement of the first *okrug*, 4 deaths from pneumonic plague were reported on Nov. 18th. Other reports put the figures for this place at 5 cases and 5 deaths between Nov. 10th and 17th, followed by 1 case on the 21st, which died on the 25th. In the Mueren settlement 1 fatal case occurred on Nov. 4th, and in that of Abil-Ishken (twelfth arrondissement of first *okrug*) single cases (all fatal) were seen on Nov. 9th, 11th, 14th, and 16th. In the Tchushak settlement (second *okrug*, third arrondissement), 1 person fell ill on the 23rd and died on Nov. 24th. In the Biskyz settlement (on the frontier of the second *okrug*) 10 cases of plague with 9 deaths occurred between Nov. 17th and 30th, and 2 further cases were recorded here, at a date not stated. Some time in November the disease appeared in the Boman settlement (second *okrug*, second arrondissement); at that of Kara-Syr (fifteenth arrondissement of first *okrug*), where 7 cases and 6 deaths occurred; and in that of Musrep-Tchagyl, in the sixth arrondissement of the Sarak district, where 5 cases of pneumonic plague, all fatal, were recorded. In the Kolden settlement, in the second arrondissement of the Narynsk district, 4 suspected cases with 1 death occurred on or about Dec. 12th; 1 suspected and fatal case was seen in the Kolybai settlement (sixth arrondissement of the Kamysh-Samara district) at a date not named; and 5 cases with 1 death occurred there between Dec. 10th and 13th, followed by another case on the 16th. In the Iliman settlement (third arrondissement of the second *okrug*) 1 fatal case occurred on Dec. 19th. In the Kosai settlement (second arrondissement of the second *okrug*) 5 cases and 2 deaths had occurred in the first half of December, followed

by 13 cases and 6 deaths between Dec. 17th and 25th; 2 further deaths occurred here on the 26th.

In the settlement of Ak-Tchagyl, in the district of Kamysh-Samara, 9 cases of plague with 2 deaths were recorded between Dec. 22nd and 27th; 2 further deaths occurred here on the 28th, and 4 more between that date and Jan. 3rd. At a place called Sheshekti, in the second *okrug* of the Primorsk (or Maritime) district, 2 fatal cases occurred on Dec. 16th. Finally, at Bezo-Kyzo, in the first *okrug* of the Primorsk district, 1 death from plague occurred on Dec. 22nd, and 2 cases with 1 death on the 30th; these last occurred in members of a family under cordon.

From the above rapid summary it will be seen that plague has been present in at least 17 different places in the Kirghiz steppes of the Astrakhan government, and that these places are situated in many different parts of those regions. All the dates mentioned in this paragraph are according to the Old Style.

Plague in Transbaikalia and Manchuria.

From telegrams published in the English papers it would seem that not only has a severe epidemic of plague established itself in Transbaikalia and in Manchuria, but that the disease in its worst form—the pneumonic—has spread thence to some of the most densely inhabited portions of China, where it has already caused a high mortality. No official news has been received here respecting the epidemic in China, but the following information has become available, from Russian official sources, concerning the outbreaks in Transbaikalia and Manchuria.

In the Chinese population in the settlement round the station of Manchuria, on the China-Oriental Railway, from the beginning of October down to Nov. 3rd (Old Style), 212 cases of pneumonic plague, 207 of which were fatal, occurred. At the Tchalainor mines 31 cases, all fatal, were recorded among Chinese labourers between Oct. 20th and Nov. 1st. Single cases had then occurred at the stations of Tchalantun, Bukheidé, Khailar, and Harbin. At the Tarbagatai mines, in Transbaikalia, 2 deaths had occurred; at Verkhneudinsk, 1 death; at Petrovsk, 4 cases and 1 death (these included the cases of Dr. Noniava and 2 sanitary employees). At this time an order was issued forbidding Chinese labourers to enter the Primorskaia (or Maritime) Province from Manchuria until the end of the epidemic, and other measures were taken. In Transbaikalia the outbreak as a whole does not seem to have been a very severe one. From Sept. 15th to Nov. 9th the totals for the province were put at 28 cases with 25 deaths. In November an increasing number of corpses of Chinese found dead in the streets was reported from Harbin; and towards the end of the month the disease was said to be causing an increasing mortality at Fu-Chia-tien, and in towns and villages situated on the trade roads between Tsitsikar and Blagoviésctchensk. In mid-December some 30 cases were daily occurring in the streets and houses of Fu-Chia-tien.

Meanwhile the disease had been causing a high mortality in the region of exploitation of the Manchuria-Oriental Railway. Between Oct. 13th and Nov. 21st 468 cases with 466 deaths had been registered here among Chinese, and 11 cases with 10 deaths among Russians. (The enormously high rate of mortality will be noticed.) Apparently the epidemic died down about this time, as the totals down to Dec. 10th were placed at only 491 cases and 488 deaths among the Chinese, and (as before) 11 cases and 10 deaths among Russians. But by some date not clearly stated, towards the end of December, these same totals were reckoned at 588 cases with 578 deaths for the Chinese and 14 cases with 13 deaths for the Russian population. At the moment of writing a still later official bulletin has come to hand, and this states that in the region above defined 154 cases of plague with 152 deaths occurred between Jan. 1st and 6th; that of these 136 cases with 135 deaths were recorded in the town of Harbin, and the rest in six other stations on the railway, and that the total numbers since Oct. 13th down to Jan. 6th had been 831 cases with 821 deaths among the Chinese, and 25 cases with 24 deaths among Europeans. Professor Zabolotny, the well-known Russian authority on plague, and Dr. Predtéchenski have been sent to the infected districts in Manchuria, with powers to organise measures for the control of what is evidently a serious epidemic of plague, apparently in its most fatal form. In this paragraph, also, all the dates mentioned are according to the Old Style.

Plague in Batoum and Baku.

A single suspected case was reported from Batoum on Jan. 24th. On Dec. 2nd (15th) a case also occurred in Baku; the patient, a young girl, died, and there was bacteriological proof that the disease was plague.

Plague in Jeddah.

The seasonal revival of plague in Jeddah has again to be reported. The first case was seen on Dec. 22nd; it was only seen after death. The patient, a native porter, had died after a six days' illness. No other case was reported until Jan. 15th, and a few further cases have occurred since, including those of two Indian pilgrims isolated on Jan. 22nd.

Constantinople, Jan. 28th.

MEDICINE AND THE LAW.

Medical Treatment after School Inspection: the Legal Position of Parents.

A CORRESPONDENT calls attention to a prosecution successfully instituted at Bridgwater in December of last year against the father of a little girl attending a local elementary school in the neighbourhood. The school medical officer had found the child's sight to be very defective, and he deposed in the witness box that neglect of treatment would prove detrimental to her physical ability in several ways. In consequence of the report made by the school medical officer the defendant, described as a "groom-gardener," received notice requesting him to send his child to Bridgwater to be examined by the county oculist, the provision of spectacles being apparently the limit of the treatment contemplated. The parents, however, took no steps in the matter, and the father, who pleaded guilty before the magistrates, expressed himself as being personally quite "indifferent." He treated it as the business of his wife to which she should attend, and stated that he could not make her take the child to the oculist. The bench inflicted a fine of £2 with costs, of which none will disapprove, but the correspondent referred to suggests that the success of the prosecution may have been due to the openly expressed indifference of the father to his child's welfare, and to the neglect of both parents to take any steps whatever to remedy a source of suffering to their child, to which their notice had been called and for which a remedy was offered to them. He asks for the expression of an opinion as to what would happen in a parallel case where the parents refused to allow a child to submit to a surgical operation. Our correspondent, no doubt, has in his mind the not infrequent case of the injured workman who claims compensation for an accidental injury, the effects of which might be removed or mitigated by a surgical operation which he declines to undergo. To quote from his letter; he writes, "It would be of great interest to those, like myself, concerned in school management, to know whether, had the condition of the child necessitated operation for its adequate treatment, for instance, had it been deaf owing to adenoid vegetations, it is likely that the parent could have been successfully prosecuted under the same section[1] for failing to take steps to have such operation carried out. My own opinion is that unfortunately such a prosecution would have failed, and that in the case reported it was the admitted indifference of the parent that enabled the prosecution to be successful."

We do not recall any quite similar case brought before the High Court on appeal in which the law relating to the subject has been discussed, and definite principles laid down for the guidance of courts of petty sessions and other tribunals, but possibly other readers may have had experience of prosecutions instituted successfully or unsuccessfully without any further question being raised. In our view all such prosecutions must depend upon the facts of the individual case brought forward and upon the evidence adduced as to the necessity for the operation for the relief of suffering in the child, the certainty of its fulfilling its object, the absence of danger to the patient, the extent to which inconvenience or

[1] Children Act, 1908, Section 12.

suffering is likely to continue or increase in the absence of operative treatment, and the amount of facility at the command of the parents for obtaining such treatment. The facts of cases of the kind indicated are likely to differ widely, and the evidence adduced by the prosecution to be of varying weight. The opinions, possibly preconceived, of magistrates also may vary considerably, and to some extent must be taken into account. If we consider, for instance, the suggested example of the removal of adenoid growths, this operation may have been successfully performed in the case of a child of a magistrate, who may thus himself have been enabled to estimate the relatively small amount of pain and inconvenience entailed and the benefit likely to accrue. Naturally, his attitude towards a parent refusing to secure the performance of a similar operation upon his child would be affected, and rightly so, by his own experience. The magistrates on occasions of this kind are asked to find as a fact that the child or young person concerned has been "neglected in a manner likely to cause such child or young person unnecessary suffering or injury to his health," and a finding that he has been so neglected can only be upset by a divisional court upon the ground that there was not sufficient evidence upon which to found it. The judges are not asked on appeal to say whether or not they would have come to the same conclusion upon the evidence, but whether there is evidence upon which it might reasonably be arrived at.

The exact words of the 12th section of the Children Act are very wide, and the application of them should present little difficulty where there is proof of avoidable suffering existing or being threatened. They are, so far as they are material to the present case, words relating to other forms of cruelty being omitted: "(1) If any person over the age of 16 years who has the custody, charge, or care of any child or young person wilfully neglects such child or young person, or procures such child or young person to be neglected, in a manner likely to cause such child or young person unnecessary suffering or injury to his health (including injury to or loss of sight, or hearing, or limb, or organ of the body, and any mental derangement), that person shall be guilty of a misdemeanour, and shall be liable (*a*) on conviction on indictment, to a fine not exceeding one hundred pounds, or alternatively, or in default of payment of such fine, or in addition thereto, to imprisonment, with or without hard labour, for any term not exceeding two years; and (*b*) on summary conviction, to a fine not exceeding twenty-five pounds, or alternatively, or in default of payment of such fine, or in addition thereto, to imprisonment, with or without hard labour, for any term not exceeding six months; and for the purposes of this section a parent or other person legally liable to maintain a child or young person shall be deemed to have neglected him in a manner likely to cause injury to his health if he fails to provide adequate medical aid for the child or young person, or if being unable otherwise to provide such medical aid he fails to take steps to procure the same to be provided under the Acts relating to the relief of the poor. (2) A person may be convicted of an offence under this section, notwithstanding that actual suffering or injury to health, or the likelihood of such suffering or injury to health was obviated by the action of another person. (3) A person may be convicted of an offence under this section, notwithstanding the death of the child or young person in respect of whom the offence is committed." It will be observed that special mention is made of neglect likely to affect the sight or hearing of the child, so that the actual case of the visit to the oculist, and the suggested one with regard to adenoid growths and their removal are both within the section. Note also that it is obligatory upon the parent to take steps to provide medical aid or to procure it under the Poor-law. He is not merely to accept it when offered or brought to his door. The neglect, however, must be "wilful."

Substantial Fines for Watering Milk.

The defences raised by defendants in cases where the alleged adulteration of food is the subject of the prosecution against them sometimes almost provoke a smile. At the Stratford police court recently a milk-seller was summoned on two informations respectively charging him with selling milk containing 19 and 35 per cent. of added water. The suggestion made on his behalf was that the lad, 13 years of age, who was in charge of his milk cart, was so confused by the appearance of the inspector that on being asked for samples he forgot to mention that the milk was sold as skimmed milk. The possible omission to give this information in the case of customers purchasing for their own consumption appears to have been taken into consideration by the bench in imposing fines of £5 and £10, the magistrate saying that the case was the worst he had met with in an experience of 23 years.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8035 births and 5673 deaths were registered during the week ending Feb. 18th. The annual rate of mortality in these towns, which had been equal to 16·1, 16·0, and 17·6 per 1000 in the three preceding weeks, declined to 17·2 in the week under notice. During the first seven weeks of the current quarter the recorded death-rate in these towns averaged 16·2 per 1000, and corresponded to the recorded rate in London during the same period. The annual death-rates in the 77 towns during last week ranged from 8·4 in Smethwick, 9·8 in Handsworth (Staffs), 9·9 in East Ham, and 10·1 in King's Norton and in Tynemouth, to 23·2 in Plymouth, 23·4 in Oldham, 24·1 in Swansea, and 26·1 in St. Helens. The 5673 deaths from all causes in the 77 towns showed a decline of 110 from the number returned in the previous week, and included 621 which were referred to the principal epidemic diseases, against 461, 477, and 525 in the three preceding weeks; of these 621 deaths, 333 resulted from measles, 132 from whooping-cough, 64 (of infants under two years of age) from diarrhœa, 55 from diphtheria, 21 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The fatal cases of measles, which had steadily increased during the first six weeks of the current year from 160 to 249, further rose last week to 333, and caused the highest annual rates of 2·6 in Bury, 2·7 in Gateshead, 2·9 in Rochdale, 3·0 in Devonport, 4·6 in Rotherham, 4·8 in St. Helens and in Rhondda, and 7·4 in Sheffield. The deaths from whooping-cough, which had increased from 85 to 123 in the four preceding weeks, further rose last week to 132; the highest rates from this disease were 2·4 in Willesden, 2·5 in Norwich, and 4·3 in Reading. The deaths of infants under two years of age attributed to diarrhœa, which had been 47 and 55 in the two preceding weeks, rose again last week to 64, and caused a death-rate of 1·4 in Burnley. The 55 fatal cases of diphtheria showed a decline of 3 from the number returned in the previous week, and included 17 in London and its suburban districts, 6 in Liverpool, 5 in Leeds, and 3 in Northampton. The 21 fatal cases of scarlet fever were equal to the number returned in each of the two preceding weeks; 5 deaths occurred in Liverpool and 2 in Manchester. The 16 deaths referred to enteric fever showed a decline of 3 from the number in the previous week, and included 3 fatal cases in Stoke-on-Trent, and 2 each in London, Liverpool, and Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the 14 preceding weeks from 1882 to 1257, had increased to 1276 on Saturday last; 166 new cases of this disease were admitted to these hospitals during last week, against 129, 130, and 147 in the three preceding weeks. These hospitals also contained on Saturday last 865 cases of diphtheria, 469 of measles, 183 of whooping-cough, and 48 of enteric fever. The 1613 deaths from all causes in London last week (showing a decline of 16 from the number in the previous week) included 421 which were referred to diseases of the respiratory system, against 374, 365, and 404 in the three preceding weeks. In the 77 towns 163 deaths resulted from different forms of violence, against 178 and 187 in the two preceding weeks, and 438 inquest cases were registered. The causes of 50, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 47 smaller towns; the 50 uncertified causes of death in the 77

towns last week included 12 in Birmingham, 10 in Liverpool, 3 in St. Helens, and 3 in South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 843 births and 698 deaths were registered during the week ending Feb. 11th. The annual rate of mortality in these towns, which had steadily increased from 14·8 to 19 8 in the four preceding weeks, declined to 19·0 in the week under notice. During the first seven weeks of the current quarter the death-rate in these towns averaged 16·9 per 1000, and was 0·7 above the mean rate during the same period in the 77 English towns. The annual death-rates last week in the eight Scotch towns ranged from 13·2 and 13·7 in Aberdeen and Edinburgh to 21·1 in Greenock and 25·3 in Dundee. The 698 deaths from all causes in the eight towns last week showed a decrease of 30 from the number returned in the previous week, and included 68 which were referred to the principal epidemic diseases, against 46, 63, and 69 in the three previous weeks; these 68 deaths were equal to an annual rate of 1·9 per 1000, the highest epidemic rates being 2·2 in Glasgow and 8·9 in Leith. Of these 68 deaths from the principal epidemic diseases, 45 resulted from whooping-cough, 9 from diarrhœa, 7 from diphtheria, 4 from measles, 2 from enteric fever, and 1 from scarlet fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 14, 22, and 33 in the three previous weeks, further rose to 45 last week, of which 26 occurred in Glasgow, 13 in Leith, and 3 in Dundee. The 9 deaths attributed to diarrhœa showed a decline upon recent weekly numbers, and included 6 of infants under two years of age. The deaths from diphtheria, which had been 8, 9, and 11 in the three preceding weeks, declined last week to 7, of which 4 deaths occurred in Glasgow. Of the 4 deaths from measles, 2 were recorded in Edinburgh. The 2 fatal cases of enteric fever were registered in Glasgow, and that of scarlet fever in Greenock. The deaths in the eight towns referred to diseases of the respiratory system, which had been 117, 138, and 161 in the three previous weeks, further rose last week to 181, and were 46 above the number returned in the corresponding week of last year. The deaths resulting from different forms of violence, which had been 27 and 28 in the two preceding weeks, declined to 22 last week. Of the 698 deaths from all causes in the eight towns last week, 201, or 29 per cent., occurred in public institutions. The causes of 19, or 2·7 per cent., of the total deaths were not certified or not stated; in the 77 towns last week the proportion of uncertified causes of death did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 600 births and 507 deaths were registered during the week ending Feb. 18th. The annual rate of mortality in these towns, which had been 19·6 and 24·1 per 1000 in the two preceding weeks, declined to 22·7 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 20·9 per 1000, whereas in the 77 largest English towns during the same period the death-rate did not exceed 16·2, and in the eight principal Scotch towns it was equal to 16·9 per 1000. The annual death-rate last week was equal to 25·5 in Dublin, 19·5 in Belfast, 25·3 in Cork, 29·7 in Londonderry, 10 9 in Limerick, and 23·4 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate last week averaged 23·8 per 1000. The 507 deaths from all causes in the 22 towns last week showed a decrease of 31 on the number returned in the previous week, and included 29 which were referred to the principal epidemic diseases, against 30 and 26 in the two preceding weeks; these 29 deaths were equal to an annual rate of 1·3 per 1000, the highest epidemic rates being 2·9 in Dublin and 7·1 in Londonderry. Of these 29 deaths from the principal epidemic diseases, 11 resulted from whooping-cough, 6 from scarlet fever, 4 from diarrhœa, 3 from enteric fever, 3 from diphtheria, and 2 from measles. The deaths from whooping-cough, which had been 18, 9, and 8 in the three preceding weeks, rose to 11 last week; 6 deaths were recorded in Dublin and 5 in Londonderry. The fatal cases of measles, scarlet fever, diphtheria, and 2 of the 3 deaths from enteric fever were registered in Dublin. In 20 of the 22 town districts no death from the principal epidemic diseases was recorded last week. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 107 and 141 in the two preceding weeks, declined to 137 in the week under notice. The 507 deaths from all causes last week included 151, or 30 per cent., which occurred in public institutions. The causes of 17, or 3·4 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner; the proportion of uncertified causes last week did not exceed 0·9 per cent. in the 77 English towns, but was equal to 2·7 per cent. in the principal Scotch towns.

VITAL STATISTICS OF LONDON DURING 1910.

In the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1910. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to a rate of 4·5 per 1000 of the population, estimated at 4,872,702 persons in the middle of last year; in the three preceding years the rates had been 8·6, 7·4, and 6·1 per 1000 respectively. Among the various boroughs the rates last year ranged from 2·6 in Hampstead, 3·1 in the City of Westminster, 3·2 in Chelsea, 3·3 in Kensington and in Stoke Newington, and 3·4 in Holborn, to 5·4 in Poplar and in Lewisham, 5·5 in Bethnal Green, 5·6 in Finsbury, 5·9 in Bermondsey, and 6·0 in Woolwich. Only 7 cases of small-pox were notified last year, against 8, 4, and 21 in the three preceding years; of these 7 cases, 2 belonged to Shoreditch and 1 each to Westminster, Islington, Poplar, Bermondsey, and Woolwich. Scarlet fever showed a markedly decreased prevalence, only 10.509 cases being notified, against 25,925, 22,072, and 17,251 in the three preceding years. Among the metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, St. Pancras, Poplar, Bermondsey, Lambeth, Battersea, Lewisham, and Woolwich. There were 9889 scarlet fever patients admitted into the Metropolitan Asylums Hospitals last year, against 23,953, 20,862, and 16,183 in the three preceding years; 1574 cases remained under treatment at the end of the year, against 4956, 3498, and 2329 at the end of the three preceding years. Diphtheria also showed a decreased prevalence last year, the number of cases notified being 5494, against 8771, 8002, and 6685 in the three preceding years. The greatest proportional prevalence of this disease occurred in Fulham, Islington, Finsbury, Bethnal Green, Southwark, Bermondsey, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 827 diphtheria patients at the end of last year, against 1168, 1241, and 904 at the end of the three preceding years; the number of new cases admitted, which had been 7303, 6797, and 5799 in the three preceding years, declined to 4882 last year. Enteric fever was rather more prevalent than it had been in the preceding year; the number of notified cases of this disease, which had been 1394, 1357, and 1042 in the three preceding years, rose again to 1284 last year. This disease was proportionally most prevalent in Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during the year was 745, against 768, 708, and 539 in the three preceding years; 88 cases remained under treatment at the end of the year, against 119, 147, and 62 at the end of the three preceding years. The greatest proportional prevalence of erysipelas occurred in Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. The 292 cases of puerperal fever notified during the year included 29 belonging to Stepney, 20 to Fulham, 20 to Islington, 20 to Wandsworth, and 19 to Lambeth. Of the 115 notified cases of cerebro-spinal meningitis 16 belonged to Islington, 10 to St. Pancras, and 7 each to Paddington, Fulham, Bethnal Green, and Stepney.

During the year under notice the deaths of 61,756 London

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1910.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON...	4,872,702	7	10,509	5494	3	1284	16	292	3982	115	21,702	4·5	—	1980	214	434	1362	—	196	4	1362	5558	1·1	61,756	13·3
West Districts.																									
Paddington	153,004	—	261	120	—	40	—	9	100	7	537	3·5	—	69	7	9	32	—	4	—	43	164	1·1	1796	12·6
Kensington	184,635	—	263	155	—	37	3	10	142	2	612	3·3	—	53	1	16	32	—	5	—	34	141	0·8	2190	12·8
Hammersmith	127,413	—	341	165	—	31	2	9	62	2	612	4·8	—	70	7	22	26	—	4	—	41	170	1·3	1548	12·7
Fulham	181,282	—	354	257	—	18	2	20	112	7	770	4·3	—	65	7	14	60	—	2	—	56	204	1·1	1908	11·1
Chelsea	75,457	—	120	83	—	16	—	3	20	—	242	3·2	—	19	—	4	12	—	2	—	12	49	0·7	950	13·1
City of Westminster	167,233	1	248	149	—	48	—	6	61	2	515	3·1	—	21	4	10	18	—	6	—	19	78	0·5	1894	12·8
North Districts.																									
St. Marylebone	125,195	—	208	127	1	22	—	4	117	2	481	3·9	—	28	7	9	44	—	6	—	22	116	0·9	1600	13·6
Hampstead	95,729	—	144	51	—	20	—	2	32	2	251	2·6	—	15	2	5	11	—	3	—	8	44	0·5	822	9·7
St. Pancras	237,792	—	681	263	—	63	—	13	191	10	1221	5·1	—	140	17	21	96	—	4	—	52	330	1·4	3261	14·4
Islington	353,356	1	731	473	1	89	1	20	213	16	1545	4·4	—	168	11	33	124	—	17	1	78	432	1·2	4529	13·3
Stoke Newington	54,838	—	85	53	—	10	—	3	31	1	183	3·3	—	11	1	2	7	—	2	—	8	31	0·6	600	11·5
Hackney	239,979	—	403	190	—	64	—	16	254	6	933	3·9	—	66	5	8	61	—	10	—	52	202	0·8	2796	12·2
Central Districts.																									
Holborn	53,142	—	68	45	—	25	—	—	42	1	181	3·4	—	14	—	4	16	—	5	—	10	49	0·9	795	16·1
Finsbury	94,578	—	165	150	—	30	—	7	170	4	526	5·6	—	66	4	21	36	—	4	1	50	182	1·9	1653	18·1
City of London	17,132	—	21	20	—	4	—	1	16	1	63	3·7	—	—	1	—	2	—	2	—	3	8	0·5	265	17·0
East Districts.																									
Shoreditch	114,387	2	213	131	—	48	—	8	130	5	537	4·7	—	84	4	14	46	—	8	—	61	217	1·9	1905	17·5
Bethnal Green	131,579	—	236	182	—	108	1	13	174	7	721	5·5	—	59	9	20	35	—	18	—	51	192	1·5	2010	15·5
Stepney	314,379	—	554	404	—	118	—	29	381	7	1493	4·8	—	103	12	29	114	—	15	—	141	414	1·3	4302	14·3
Poplar	172,432	1	470	175	1	62	—	15	209	3	936	5·4	—	42	12	21	84	—	13	—	87	259	1·5	2609	15·7
South Districts.																									
Southwark	211,832	—	419	284	—	54	—	16	244	3	1020	4·8	—	226	9	35	60	—	7	—	90	427	2·0	3360	16·6
Bermondsey	127,238	1	364	210	—	38	—	6	130	5	754	5·9	—	145	14	19	43	—	4	—	85	310	2·4	2240	18·1
Lambeth	327,074	—	908	327	—	78	1	19	193	5	1531	4·7	—	122	22	26	53	—	18	—	80	321	1·0	4091	12·9
Battersea...	188,222	—	488	227	—	45	2	16	170	5	953	5·1	—	74	7	12	51	—	7	1	57	209	1·1	2128	12·1
Wandsworth	305,838	—	681	286	—	54	—	20	182	5	1228	4·0	—	43	11	13	70	—	9	—	39	185	0·6	3093	10·7
Camberwell	286,058	—	511	272	—	76	2	7	219	2	1089	3·8	—	136	10	22	70	—	9	—	61	308	1·1	3440	12·5
Deptford	119,642	—	301	130	—	24	2	2	144	1	604	5·1	—	59	3	11	48	—	5	—	50	176	1·5	1666	14·7
Greenwich	112,935	—	171	168	—	20	—	5	89	1	454	4·0	—	48	3	10	57	—	3	—	37	158	1·4	1306	11·8
Lewisham	164,899	—	573	224	—	29	—	5	61	2	894	5·4	—	12	12	20	29	—	3	—	24	100	0·6	1585	10·0
Woolwich...	135,422	1	526	172	—	10	—	8	90	1	808	6·0	—	22	12	4	25	—	1	1	17	82	0·6	1415	11·2
Port of London	—	—	1	1	—	3	—	—	3	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

residents were registered, being equal to a corrected death-rate of 13·3 per 1000, against 15·2, 14·4, and 14·6 in the three preceding years, the average rate for the ten years 1900–09 being 16·4 per 1000. Among the several boroughs the lowest death-rates last year were 9·7 in Hampstead, 10·0 in Lewisham, 10·7 in Wandsworth, 11·1 in Fulham, 11·2 in Woolwich, 11·5 in Stoke Newington, and 11·8 in Greenwich; and the highest rates 16·1 in Holborn, 16·6 in Southwark, 17·0 in the City of London, 17·5 in Shoreditch, and 18·1 in Finsbury and in Bermondsey. The deaths from all causes included 5558 which were referred to the principal infectious diseases; of these, 1980 resulted from measles, 214 from scarlet fever, 434 from diphtheria, 1362 from whooping-cough, 196 from enteric fever, 4 from ill-defined pyrexia, and 1368 from diarrhœa, but not any from small-pox or from typhus fever. These 5558 deaths were equal to a rate of 1·1 per 1000, the death-rate from the same diseases in the three preceding years being 1·4, 1·4, and 1·3 per 1000, and averaging 1·8 per 1000 for the ten years 1900–09. The death-rates last year from these diseases ranged from 0·5 in the City of Westminster, in Hampstead, and in the City of London, and 0·6 in Stoke Newington, Wandsworth, Lewisham, and Woolwich, to 1·5 in Poplar and in Deptford, 1·9 in Finsbury and in Shoreditch, 2·0 in Southwark, and 2·4 in Bermondsey. The 1980 deaths from measles were 100 in excess of the corrected average number for the five preceding years; this disease was proportionally most fatal in Hammersmith, St. Pancras, Finsbury, Shoreditch, Southwark, and Bermondsey. The 214 fatal cases of scarlet fever were 329 fewer than the corrected average number; the greatest proportional mortality from this disease occurred in St. Pancras, Bethnal Green, Poplar, Bermondsey, Lambeth, Lewisham, and Woolwich. The 434 deaths from diphtheria were 248 below the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, Finsbury, Bethnal Green, Southwark, and Bermondsey. The 1362 fatal cases of whooping-cough showed a slight decline from the corrected average number; the greatest proportional mortality from this disease occurred in St. Pancras, Finsbury, Shoreditch, Stepney, Poplar, Deptford, and Greenwich. The 200 deaths referred to "fever" were 26 fewer than the corrected average number for the five preceding years; the highest "fever" death-rates were recorded in Holborn, the City of London, Shoreditch, Bethnal Green, and Poplar. The 1368 fatal cases of diarrhœa were equal to only one-half of the corrected average number; this disease was porportionally most fatal in Finsbury, Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Deptford. In conclusion, it may be stated that the aggregate mortality in London last year from these principal infectious diseases was 25·6 per cent. below the average for the five preceding years.

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment has been notified:—Surgeon: G. P. Adshead to Haslar Hospital.

ARMY MEDICAL SERVICE.

Colonel Thomas F. MacNeece, on completion of four years' service in his rank, retires on retired pay (dated Feb. 16th, 1911). Lieutenant-Colonel Henry H. Johnston, C.B., from the Royal Army Medical Corps, to be Colonel, vice T. F. MacNeece (dated Feb. 16th, 1911).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Richard E. R. Morse retires on retired pay (dated Feb. 18th, 1911).

The under-mentioned to be Lieutenants (on probation) (dated Jan. 27th, 1911): Benjamin Biggar, James Dunlop Kidd, Charles Morgan Finny, Gordon Wilson, William Struan Robertson Steven, Edward Geoffrey Stayner Cane, William Arthur Frost, Lieutenant William Thomson Graham (from the Royal Army Medical Corps Special Reserve), Francis Aidan Robinson, Douglas Reynolds, John Sutherland Levack, Pierce Morgan Joseph Brett, Patrick Hayes, Lieutenant Thomas Alexander Weston (from the Royal Army Medical Corps Special Reserve), Walter Bisset, Tom Chamney Russell Archer, William Lionel Evelyn Fretz, and Charles Douglas Kingsley Seaver.

The under-mentioned Lieutenants are seconded under the provisions of Article 300, Royal Warrant for Pay and Promotion, 1909 (dated Jan. 27th, 1911): Benjamin Biggar, John S. Levack, and Thomas A. Weston.

Colonel H. H. Johnston, C.B., from the Curragh, has been appointed Administrative Medical Officer at Chatham in succession to Colonel T. F. MacNeece. Colonel D. Wardrop, C.V.O., has been appointed House Governor and Medical Superintendent of the Convalescent Home for Officers at Osborne, in succession to Lieutenant-Colonel C. R. Kilkelly, C.M.G., M.V.O., resigned. Lieutenant-Colonel J. A. Jones has been selected for appointment as an Administrative Medical Officer of the Welsh Territorial Division, vice Colonel P. E. Hill, resigned. Lieutenant-Colonel G. F. Gubbin, on completion of a tour of service in India, has been posted to the Dublin District. Lieutenant-Colonel S. G. Allen, from the London District, has taken up duty at Gibraltar. Lieutenant-Colonel L. T. M. Nash has been transferred from Hyderabad, Sind, to the Station Hospital at Karachi, relieving Lieutenant-Colonel R. L. R. Macleod, who has been posted to Aden. Major H. V. Prynne has taken over duty as Medical Officer in Charge of the Royal Military Academy at Woolwich, vice Major G. A. Moore, whose tenure of the appointment has expired. Major C. A. Young has been selected for appointment as Staff Officer to the Administrative Medical Officer of the Welsh Division at Shrewsbury, with effect from April 1st next. Major C. G. Spencer, from Queen Alexandra's Military Hospital, London, has taken up the appointment of Specialist in Advanced Operative Surgery at York. Major A. E. Thorp, from Tidworth Park, has joined for duty at Pretoria. Major J. F. Burke has been transferred from Lancaster to Falmouth. Major M. D. Erskine has been selected for appointment as Staff Officer to the Administrative Medical Officer of the Lowland Division. Major John M. Buist has taken over duty at Pontypridd from the Royal Victoria Hospital, Netley Abbey. Major J. S. Gaillie has been appointed Specialist in Dermatology and Venereal Diseases to the Sixth (Poona) Division. Captain A. W. Sampey, from Colchester, has taken over medical charge of the staff and families at Warley. Captain E. J. H. Luxmoore, on return from India, has been appointed for duty at the Military Hospital, Dover. Captain W. F. Tyndale, C.M.G., from the Curragh, has been posted to Dublin. Captain L. Bousfield has been transferred from Falmouth to Devonport. Captain D. O. Hyde, at present serving in Dublin, has been selected for appointment as Staff Officer to the Administrative Medical Officer of the West Riding Division at York, with effect from April 1st next. Captain A. McMunn has taken up duty at Portobello Barracks, Dublin. Captain S. M. Adye-Curran has taken over charge of the Brigade Research Laboratory at Sialkot. Captain D. P. Watson, from Pembroke Dock, has joined at Lancaster. The following officers (lieutenants) have, on arrival in India, been posted to Rawal Pindi to undergo a special course of instruction in Indian Sanitation: D. H. C. MacArthur, H. Gall, A. W. Byrne, and T. J. Mitchell. Lieutenant C. H. O'Rorke, from Newbridge, has taken up duty at the Curragh. Lieutenant J. A. Manifold has been transferred from Piershill to Fort George. Lieutenant J. B. Hanafin, from Sialkot, has been posted to Kalabagh. Lieutenant E. C. Lambkin, from Windsor, has joined for duty at the Guards Depôt, Caterham.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. R. Adie, Bengal Presidency, has been placed on special duty in connexion with the investigation of malarial fevers in India. Lieutenant-Colonel J. K. Close has arrived home on leave of absence from Bombay. Major E. Ludlow Perry has been placed at the disposal of the Sanitary Commissioner with the Government of India. Major A. H. Moorhead, Bengal, and Major J. C. H. Leicester, civil surgeon of Simla, have arrived home on leave of absence from India. Major F. N. Windsor has been transferred from Rangoon to Calcutta as Chemical Examiner. Major G. McI. C. Smith has been appointed Civil Surgeon at Shapur in succession to Captain W. W. Leudwine. Captain D. N. Anderson has been granted six months' extension of his leave on medical certificate by the Secretary of State for India. Captain T. F. Owens, chemical examiner and bacteriologist to the Government of Burma has been transferred for temporary inspection duty to Madras. Captain C. F. Weinman has been appointed to

officiate as Resident Physician at the Medical College Hospital, Calcutta, during the absence on deputation of Captain C. J. Coppinger. Captain C. A. F. Hingston, late medical officer of the 76th Punjabis, has been selected for duty in the Madras Presidency. Captain N. M. Wilson has been appointed Agency Surgeon at Meshed and Assistant to the Agent at Khorasan by the Foreign Department of the Government of India. Captain A. B. Fry has been appointed to act as an additional Deputy Secretary to the Commissioner in Bengal in connexion with the investigation of Malarial Fevers in India. Captain G. D. Franklin, Captain F. O. D. Fawcett, and Captain D. Munro have arrived home on leave of absence from India.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Highland Field Ambulance, Royal Army Medical Corps: Major Alexander Ogston, from the 1st Highland Field Ambulance, Royal Army Medical Corps, to be Major (dated May 22nd, 1910).

2nd London (City of London) Field Ambulance, Royal Army Medical Corps: Frederic Morres to be Lieutenant (dated Dec. 10th, 1910).

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant Ernest A. Boxer resigns his commission (dated Feb. 18th, 1911).

1st Northumbrian Field Ambulance, Royal Army Medical Corps: Lieutenant Frederick G. Armstrong resigns his commission (dated Feb. 18th, 1911).

Attached to Units other than Medical Units.—Lieutenant Wilfred E. Alderson to be Captain (dated Oct. 26th, 1910). Lieutenant Frederick K. Smith to be Captain (dated Nov. 1st, 1910). Lieutenant-Colonel Duncan W. Currie resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Feb. 18th, 1911).

DEATHS IN THE SERVICES.

The death of Charles Alexander MacMunn, M.D. Dub., at the age of 58 years, is announced. He took part in the South African War 1899–02, and was appointed by Lord Roberts as Staff Officer on the commission which inquired into the administration of the medical service during the war. He was medical attendant to Lord Roberts, was mentioned in despatches, and received the Queen's medal with three clasps. He was formerly colonel commandant of the branch of the Royal Army Medical Corps (Territorials) which he founded at Wolverhampton, and he also acted as brigade surgeon of the North Midland Division of the Territorial Force. He was a surgeon-lieutenant-colonel of the Army Medical Reserve, and held the Jubilee medal, the Volunteer long service decoration, and the Coronation medal.—Surgeon-Lieutenant-Colonel Henry Frank Hensman, C.M.G., late 1st Life Guards, at Rodbaston, Penkridge, Staffordshire, on Feb. 21st, aged 72 years. He entered the service as assistant surgeon in 1862 and retired in 1894. He served in the Umbeylu campaign on the North-west Frontier of India in 1863–4, and in the South African war in 1899–1900 (promoted colonel, mentioned in despatches, and received the C.M.G.). He was an Honorary Associate of the Order of St. John of Jerusalem.

MEASLES AT THE NAVAL COLLEGES.

Replying to a question by Mr. W. T. Wilson in the House of Commons on Feb. 21st, Mr. McKenna said that the Admiralty had no reason to suppose that the firms employed by the parents of naval cadets to make uniforms did not take proper precautions for the protection of their customers, or that infectious disease had ever been introduced into the colleges by infected uniforms.

THE RED CROSS IN THE FRANCO-GERMAN WAR.

Although some 40 years have passed away since the Franco-German war, the memories of 1870–71 still remain strong in the minds of those who remember the war, and cannot be recalled without a thrill of emotion by those who took part in it. The recollections of the medical side of the campaign, more especially as seen from the German lines, which Mr. Henry Rundle[1] has republished in book form, much of the matter for the small volume having already appeared in the *St. Bartholomew's Hospital Journal*, will be read from first page to last with increasing interest. Starting with a brief sketch of the events which led up to the quarrel between France and Germany, he describes how he, together with other volunteers, set out for the seat of war under the auspices of the Red Cross Society, and the part they played in ministering to the sick and wounded. Though the war was brief, its horrors were sufficiently great, but Mr. Rundle describes them without in any way harrowing the feelings of his readers. The book is well printed on thick paper, the type is large, the illustrations are good, and there is an introductory note by Professor Howard Marsh. Members of the various voluntary aid societies now being formed throughout the country will read this book with profit, as it practically illustrates some of the work of the Red Cross, "the one link that remains unbroken between nations" when wars arise. The profits on the sales of the book will be given to the building fund of the Nurses' Homes at the Royal Portsmouth Hospital, which is to be the Portsmouth memorial to King Edward VII.

[1] With the Red Cross in the Franco-German War: Some Reminiscences by Henry Rundle, F.R.C.S. London: Werner Laurie. Pp. 90. Price 2s. 6d. net.

At a meeting held at Truro on Feb. 18th for the purpose of forming a branch of the British Red Cross Society, Inspector-General A. W. May, R.N., said that Cornwall was far behind the rest of the country in the matter of voluntary aid associations.

Correspondence.

"Audi alteram partem."

THE CLIMATIC ADAPTATION OF THE IMMIGRANT.

To the Editor of THE LANCET.

SIR,—Your annotation on the above subject with reference to Major Woodruff's article in the *Eugenics Review* moves me to offer some comments. In a paper I read at the British Medical Association annual meeting in 1910 I traced the evolution of the blonde Nordic type, showing that, by reason of its development, its postulates for vigorous health are comparative dryness of soil and climate, plenty of elbow-room, a bright summer, and a frosty rather than a rainy winter.

Tacitus, in his celebrated treatise on the "Germans" (i.e., the various tribes of Nordic race), remarks: "It is well known that none of the German nations inhabit cities or even admit of contiguous settlements. They dwell scattered and separate, as a spring, a meadow, or a grove may chance to invite them. Their villages are laid out, not like ours in rows of adjoining buildings, but every one surrounds his house with a vacant space." This passage is of interest in view of the well-ascertained inability of blondes to adapt themselves to urban existence at the present day. As regards their susceptibility to sunlight, I have been making observations on this point for some years, and am convinced that so far from it having a deleterious effect on them they need plenty, provided it be not associated with tropical heat or great humidity.

The most popular holiday resorts of our upper classes, among whom the blonder British types are mostly found, are the east coast in summer, the high Alps in winter, the latter evidently ministering to some physiological need. The purest blonde types are found round the shores of the Baltic, and the climatic conditions prevailing there can be taken as a model for the requirements of this race. It is notable that the south-west of Norway, where there is a pelagic climate with high rainfall, is peopled by a race closely resembling that of the central mountain ranges of Europe—the Alpine type. Similarly, in Holland the brunets, are found on the damper levels west of the Zuyder Zee and in the cities, the blondes predominating in Friesland and other eastern districts. This is well shown in a map in Professor Ripley's "Races of Europe."

The dominant Australian type, the "Cornstalk," familiar to us in the Antipodean athletes, cricketers, &c., who visit England from time to time, is "Nordic" in type, the freer open-air life and dry climate favouring this race. The Boer is also mainly a Nordic with a strain of darker races, and here again the climate of the veldt presents most, if not all, of the requisite conditions. The Canadian plains also should provide a favourable environment for immigrants of

fair complexion, and such information as I have been able to obtain tends to confirm this opinion.

It is, however, unnecessary to go so far afield as the colonies to study the effects of migration. It confronts us at our very doors. The British people is largely a migrated community not yet fully adapted to its environment. When, however, the greater migrations into this country ended with the Normans, and local communities of mixed origin settled down into pastoral and agricultural pursuits, local types were gradually evolved through the circumscribed character of the said communities. These local types were, so to speak, specialised for particular climatic and social conditions, a variety of factors determining the preponderance of one or other racial type in surviving individuals.

In this way considerable progress must have been made towards a natural equilibrium of adaptation. At the beginning of the industrial era we were probably the most virile people in Europe. The rise of industrialism, however, together with greater facilities of transit, has signalised the disintegration of rural communities, the dislocation of rural types, and their migration into the cities, where the aggregation of mixed elements has been subjected to the stress of natural selection in a severe form pending the evolution of an industrial type.

Major Woodruff's suggested investigation among the "failures" has much to recommend it, but the difficulty lies in obtaining the coöperation of a sufficient number of adequately trained observers. When similar investigations have been attempted trouble has constantly arisen from disagreement as to standards, criteria, &c., and the inability to procure uniformly accurate returns. Your annotation closes with the suggestion that "the production of a higher mental type depends probably, at any rate in great degree, on first acquiring a physique perfectly adapted to its climatic environment." But surely the human brain has achieved its extraordinary development through man's long contention with environments to which he was *not* perfectly adapted, having left the regions of his origin to spread himself over the earth. It is only when he is crushed by too severe or sudden a change that he degenerates.

I am, Sir, yours faithfully,

Hampstead, N.W., Feb. 20th, 1911. J. S. MACKINTOSH.

A COMBINATION TEST FOR COLOUR VISION.

To the Editor of THE LANCET.

SIR,—Some of your readers may remember seeing an article which I published in THE LANCET of July 15th, 1893, with this title. This article described a lantern which I had brought out, and which in many particulars anticipated the lantern which Dr. F. W. Edridge-Green described in his very interesting Hunterian lectures on Feb. 1st and 3rd.

My telechrome, as it is called, consists of an apparatus in which six colours—yellow, blue, pale green, signal-green, rose, and red—are shown by transmitted light to the patient through two apertures (one at a time, of course). One of these apertures is the perspective, when seen at 6 metres, of a 6-inch lamp at 100 yards; the other of the same lamp at 2000 yards. With the exception of purple, which I did not consider necessary, the colours are almost identical, it would appear, with those of Dr. Edridge-Green's.

My test possesses two points, however, which I think have an advantage over Dr. Edridge-Green's. The first is that the illumination can be readily varied, and this is important; while the second point is that the reflected colours from, say, a set of Holmgren's wools are shown to the patient at the same time—and he is required to compare the luminous colours of the telechrome with the non-luminous colours of the wools. If he should be faulty in either case the test detects the fact.

In other respects the telechrome may be used much as Dr. Edridge-Green uses his lantern. I also employ a "fogging" glass—and originally had a neutral tint modifier as well, but discarded it eventually, as I found that simple ground glass was apparently quite sufficient. May I add in conclusion that my telechrome has been used regularly at the Admiralty for many years, with (I am told) excellent results? Staff-Surgeon Preston, R.N., spoke very favourably of it upon the Commission on Colour Vision in 1892—as may be seen in the report of that committee published as a Blue-book—and it has continued to be in use ever since.

I am, Sir, yours faithfully,

A. ST. CLAIR BUXTON,

Consulting Surgeon to the Western Ophthalmic Hospital.

PS.—An illustrated leaflet on the telechrome may be obtained from Messrs. Curry and Paxton.

Mansfield-street, W., Feb. 16th, 1911.

GIRLS' SCHOOLS, GAMES, AND NEURASTHENIA.

To the Editor of THE LANCET.

SIR,—It seems to me that Dr. Robert Jones has, in his letter in THE LANCET of Feb. 4th, to use a homely but expressive metaphor, got the wrong sow by the ear. It is true that in accounting for neurasthenia and disinclination for domestic life in girls educated in high-class schools, he mentions two factors—the nature of their studies and the nature of their games—but his letter is subsequently devoted wholly to inveighing against the latter. Now, if neurasthenia and disinclination for domestic life are particularly prevalent among this class of girls, I contend that it is more likely to be due to the first factor. Among the ancient Greeks, a people noted for even balance between and perfection of mind and body, the women were trained in gymnastics, and particular importance was attached to ball games. But is it among such girls, whose splendidly improved physique is the constant theme of all sufficiently long-lived observers, that neurasthenia, at any rate, is most prevalent? My experience is that it is among such a class as Board School mistresses of inferior physique, who have been exposed to severe mental competition, without the time and opportunity for games, that it is more often to be found.

I am, Sir, yours faithfully,

GILBERT E. MOULD.

The Grange, near Rotherham, Feb. 9th, 1911.

EYE-STRAIN IN RELATION TO GENERAL HEALTH.

To the Editor of THE LANCET.

SIR,—In the article on the above-mentioned subject, contributed to this week's LANCET by Dr. James Hinshelwood, I find the following: "In fact, my experience is that the small amounts of astigmatism give rise to symptoms of discomfort more frequently than the high degrees. The explanation, I think, is that a person with a high degree of astigmatism makes no effort to see better, as his vision is so defective, *but that the smaller degrees of astigmatism, only causing a slight blurring, induce the patient to make a continuous accommodative effort to counteract it* and get clear images, and hence cause continuous ciliary strain." I do not wish, in criticising a very interesting paper, to be captious, but I certainly demur to that part of the extract I have italicised. The inference here plainly is that certain isolated fibres of the ciliary muscle are capable of independent action, so that a static corneal astigmatism can be neutralised by a dynamic lenticular astigmatism. The ciliary muscle (so far as its meridianal fibres are concerned) is one muscle controlled by one centre and not several muscles controlled by several centres. This being so, how can one part act independently of other parts? Will Dr. Hinshelwood kindly inform your many ophthalmic readers upon what recent investigations he bases his statement?

I am, Sir, yours faithfully,

London, Feb. 18th, 1911. KENNETH CAMPBELL.

THE HYPERÆMIA TREATMENT OF UNUNITED FRACTURE.

To the Editor of THE LANCET.

SIR,—I am led by Mr. A. E. Barker's interesting narrative in THE LANCET of Feb. 4th, giving a series of cases occurring in his practice in which the hyperæmia treatment of ununited fracture was strikingly successful, to relate the following example of its application.

A middle-aged gentleman, the victim of melancholia, leaped from his bedroom window, a height of 30 feet, falling on the lawn, and striking in his fall his left forearm on the

edge of a garden box. Simple fracture of both bones midway between elbow and wrist was his only injury. Splints were applied from above the elbow to the finger-tips. Eight weeks later there was no sign of bony union, the lower segment rocking flailwise on the upper. The only change of treatment now made was the application, morning and evening, for three hours at a time, of a broad elastic band about the upper arm, maintained at such tension as to induce flushing and turgor, without œdema or pain. Within three weeks the solidarity of the forearm was restored and the fragments of each bone were found to be reunited.

In this case the methods advocated by Lucas-Championnière were not employed at any stage of the treatment, not that they were undervalued, but because the partial disablement of this suicidal patient so sensibly relieved the cares of the nurses, and justified such a relaxation of the restraints imposed upon the sufferer, that there was no strong motive for hastening the processes of repair. If the omission of these methods may help to account for the failure of bony union in the first eight weeks, it may fairly be argued that their continued omission during the three weeks of Bier's treatment speaks strongly in favour of induced hyperæmia.

I am, Sir, yours faithfully,

S. N. BRUCE, M.R.C.S. Eng.

Queensborough-terrace, W., Feb. 16th, 1911.

CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

To the Editor of THE LANCET.

SIR,—While Professor Waller might have been justified (THE LANCET, Feb. 18th, p. 470) in presuming my ignorance of the statement made regarding the discoveries of Sir Charles Bell in his "Introduction to Human Physiology," he is under a misapprehension when he presumes my ignorance of the original works of Sir Charles Bell. Professor Waller must forgive me if I refuse to accept a quotation from his well-known text-book as authoritative. I do not recollect any statement by Sir Charles Bell in either the "Idea of a New Anatomy of the Brain" or in the paper in the Philosophical Transactions of 1821 which justifies Professor Waller's quotation that Sir Charles Bell "inferred that the anterior or 'cerebral' roots are motor and sensory and the posterior or cerebellar roots serve to govern vital actions." Before awakening the long-dead discussion regarding the priority of Magendie, whose claims were ardently advocated in 1822 by a former and somewhat unfriendly pupil of Bell's—Professor H. Mayo—it would be well for Professor Waller to quote, not from his own works, but from the original works of the author in dispute, so that readers of THE LANCET may form an unbiassed opinion as to the nature and time of Sir Charles Bell's discoveries.

I am, Sir, yours faithfully,

A. KEITH.

Royal College of Surgeons of England, Feb. 18th, 1911.

THE SANITARY OFFICERS (OUTSIDE LONDON) ORDER, 1910.

To the Editor of THE LANCET.

SIR,—This important document, dated Dec. 13th, 1910, reached the local sanitary authorities concerned on Dec. 16th, 1910. It was accompanied by a circular dated Dec. 14th, 1910, and a memorandum vaguely dated "December, 1910." Throughout the Order the term "the Council" replaces that of "the Sanitary Authority," which was used in the Orders of March, 1891, which Orders are hereby rescinded. The Order came into force on Jan. 1st of this year, except Article X., which does not do so until April 1st, 1911. It is addressed to the councils not only of "municipal boroughs and other urban districts," but also to "the councils of the several rural districts" in England and Wales.

This new Order is not meeting with a cordial reception from medical officers of health or sanitary inspectors because, whilst making alterations in a few petty details, the great opportunity has been missed to rectify the mistakes and omissions of the old Orders. The medical officer of health or sanitary inspector who is too zealous or energetic is still left to the mercy of his laggard council, who can subject him to the indignity and risks of annual re-election as of yore. He now holds his important office only on tenure equivalent to an ordinary house tenancy. No qualification by examination is yet asked for from the candidates for inspectors' posts. So we shall still see blacksmiths, bankrupt farmers, corn dealers, &c., filling these appointments, where special knowledge of their work is absolutely necessary. Men who have studied their subject and proved their knowledge before the examiners of the Sanitary Inspectors' Board or the Royal Sanitary Institute will have no chance against the candidate who has local influence or, perhaps, is himself a member of the council requiring an inspector.

The Order does not define the municipal status of the medical officer, although the Circular states that "the inspector of nuisances, *as a rule*, should act under the supervision of the medical officer of health, who must be regarded as the head of the Public Health Department of the Council." (The italics are mine.) In other particulars the Order and the Circular are contradictory. This may be due to the haste with which the new Order was devised. Thus Article XX. (14) orders "that the inspector shall, if directed by the M.O.H.," &c.; the Circular says, "Article XX. (14) requires the officer, if so directed by the Council," &c. Which is the correct version? Again, Article XX. (16) of the Order says that the inspector shall furnish the medical officer of health, as soon as practicable after Dec. 31st in each year, particulars of the work he has done during the year; the Circular says, "By subclause 16 the inspector is to make an annual report to the Council on the work performed by him during the year." Which are we to stand by—the terms of the Order or the interpretation of the Order by the Circular? In the preamble (p. 2) of the Order the first word "county" in the penultimate line is a mistake for "municipal"—another specimen of hasty revision!

Of course, the Order places fresh duties on the officers concerned (see Articles XIX. (7), (13), (15), and XX. (14), (15), (16)), but by Article XIX. (14) the medical officer of health is spared the trouble of referring in his annual report to his council and the Local Government Board as to offensive trades, factories, and workshops in his district. He is also relieved from reporting anything about school closure to the Board. Why?

The *Memorandum* is important, as it records publicly the opinion of the Board that the appointment of part-time medical officers of health or sanitary inspectors is not to be desired. In either case it gives a list of other duties which (in the Board's opinion) may be allotted (in small districts) to these officers. I venture to think that few medical officers of health will agree that the duties of police surgeon (which are analogous to private practice) are compatible with their primary duty. These "omnibus" appointments, recommended though they are by the Local Government Board, are most undesirable, as they encourage pluralism and create officers who as regards any one of his several appointments would be "an official part-timer." Is this consistent on the part of the Board? In the Memorandum, too, the Board advocates adequate salaries, but at the same time, in the penultimate paragraph of p. 2, gives its approval to an iniquitous plan by means of which economical (or mean) authorities can and do arrange to give a part-time salary to a medical officer of health, who is not allowed to engage in private practice and yet cannot do anything practicable to supplement his inadequate salary, because his council takes care to give him enough work to occupy his *whole time*. In the last paragraph of the Memorandum the Board offers councils the most proper advice about the travelling expenses of the sanitary inspector. Why did not the Board offer the same with reference to medical officers, to whom the necessity of adequate travelling allowance, especially over large areas, is equally great?

In conclusion, Sir, let me remind you that it is nearly 20 years since the last Orders were issued. Perusal of the new Order will convince anyone that the Local Government Board has done thereby little or nothing to remove the difficulty of honest and efficient administration of the numerous Acts of Parliament, Regulations, Orders, &c., concerning the improvement of the public health. I am exceptionally situated for obtaining the views of many medical officers of health on matters concerning their arduous work, and I can therefore claim that the foregoing

criticism of the latest effusion of the Local Government Board is something more than a merely personal one.

I am, Sir, yours faithfully,

Feb 13th, 1911. ENERGY.

OMNOPON.

To the Editor of THE LANCET.

SIR,—I find that "pantopon" is now officially styled "*omnopon*," and Messrs. Hoffmann-La Roche, the sole makers of this preparation, have been good enough to supply me with samples of the drug under that name. They are in every way similar to the "pantopon" used in the cases referred to in my article, "Some Remarks on Pantopon Anæsthesia," and I should like to add that my remarks with regard to "pantopon" apply equally to "omnopon." The only difference is in the name, since I am told there is a legal difficulty in registering the name "pantopon" in this country. In justice to Messrs. Hoffmann-La Roche I hope you will be good enough to publish this addendum.

I am, Sir, yours faithfully,

Buckingham-street, W.C., Feb. 20th, 1911. C. LOUIS LEIPOLDT.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Infants' Health Society.

THE Birmingham Infants' Health Society, founded in 1907, is one of the most prominent of the agencies attempting to grapple with the problem of infant mortality. It concentrates its energies upon St. Bartholomew's Ward, where the infant mortality is particularly heavy, and endeavours not only to enlighten ignorant mothers as to their maternal duties, but to study at first hand the nature of the factors which give this ward an unenviable reputation. A considerable amount of apathy and prejudice has been overcome, and the annual report just issued gives abundant evidence of progress. At the weekly "infant consultations" where babies under 12 months of age are weighed and the mothers advised as to feeding, clothing, and general management, 411 children were examined last year, as compared with 353 in 1909 and 204 in 1908. The infant mortality among these "consultation infants" was 46·4, as against 201 for the whole of St. Bartholomew's Ward. The consultation mortality in 1908 was 95·2, and in 1909 49·8. The part played by feeding is strikingly illustrated by the fact that whereas there were only 8 deaths out of 171 breast-fed children, 7 bottle-fed children out of 53 died. Breast-fed babies 12 weeks old weighed on an average 4914 grammes, bottle-fed children of the same age 3813 grammes. At 12 months of age the difference was still more in favour of natural feeding. The effects of poverty on the physique of the child, even when breast-fed, are indicated in a series of tables contained in the report. Though practically all the mothers attending are in very poor circumstances, yet it is possible to divide them into two groups: (*a*) those distinctly suffering from poverty; and (*b*) those in slightly better circumstances. A three months old child belonging to group (*a*) fed at the breast weighs 4787 grammes, while the weight in group (*b*) was 5048 grammes. The average mortality-rate in St. Bartholomew's Ward for the five years ended Dec. 31st, 1909, was 205·8, and it is encouraging to note that the very class which in times past furnished the greater proportion of the infant mortality of the ward is the class which is now coming under the influence of the society. The society has "At Homes," at which the women learn knitting and sewing; evening educational classes, at which the lady superintendent, Miss Vine, instructs mothers in the feeding, bathing, and general management of babies; and also lectures on personal hygiene, home nursing, and cooking. The maternity department is very helpful to prospective mothers, and there is a system of home visitation which ensures proper attention for mother and child. At the annual meeting presided over by the Lady Mayoress, Dr. J. Robertson, medical officer of health, in moving the adoption of the report, said that, as to the methods of reducing infant mortality, he for many years sat on the hedge, and looking back he was not sure that he was not right, because many of the methods proposed 10 or 15 years ago had proved fallacious. Milk depôts where a pure article could be obtained at a cheap rate were supposed to be the method of dealing satisfactorily with the problem, but the Birmingham figures showed all along that the babies did not die because they got bad milk. By the health visitors they found that those districts where ignorance, carelessness, and poverty prevailed were associated with high mortality. If they could do something to stop babies from dying they also did much more for those who survived but whose lives at present were more or less wrecked by carelessness on the part of the mothers. There was a large proportion of babies who weathered the storm of the first year but who grew up into stunted men and women. Mr. Steel-Maitland, M.P., in supporting the resolution, referred to two dangers which occurred when public attention was attracted to a particular subject. One was what he might call washy semi-scientific talk and the other sentimental talk actuated by no wish for knowledge and activities directed by no knowledge. There was hardly any subject, he thought, about which these two faults were more apparent than the birth-rate. Many people uttered a dirge over the decline in the rate, while others regarded it as a good sign. There could be no doubt that if the birth-rate continued to fall without any counteracting influences, it would be a great disadvantage. There was ample room in this country for a vaster population if properly organised, while in our dominions abroad the room was unlimited. They wanted, not so much that the birth-rate should not decrease, but that the survival-rate of the adult active population should increase. Greater attention, he considered, should be paid to the ante-natal influence in mothers who had to go to work.

Staffordshire and King Edward Memorial.

A meeting to consider the proposal for a scheme to deal with consumption in Staffordshire as a memorial to the late King was held on Feb. 11th, at Stafford, under the presidency of the Lord Lieutenant, Lord Dartmouth. Dr. G. Reid, the county medical officer of health, had drawn up a memorandum on the question. In the course of it Dr. Reid stated that the results obtained by the sanatorium method of treatment had not so far justified the enthusiasm with which it was at first advocated. Experience showed that, with the inadequate means at present available of getting to know of cases early enough, in only about one-fifth of the definite cases could one look for really successful results from such treatment. On the other hand, a sanatorium used for isolation purposes was of great value, because the chief danger of infection was home contact, and the incurable cases were the most dangerous. No matter what form of treatment was adopted, some machinery for home supervision and the detection of the disease in its early stage must be provided. No matter how far local authorities might be induced to go in their efforts to deal with the problem, there would be ample scope for philanthropic help, and he suggested that any fund which might be collected in the county should be utilised in that direction. By means of such a fund it would be possible to organise a system by which, with the coöperation of local nursing associations, subsidised by the local health authorities, district nurses might be employed as house visitors to act under the direction of the medical officers of health, whom they would keep informed regarding the progress of cases which had undergone treatment. The nurses would also exercise supervision with the families as regarded home preventive measures and note from time to time any signs of ill-health suggestive of commencing consumption, in order that, if verified by medical examination, early, and therefore far more effective, steps might be taken in the way of treatment. It would be necessary to have classes for nurses to instruct them in their duties. The organisation of such a scheme might be entrusted to the County Nursing Association, and arrangements could also be made for lectures to be given in populous centres. The following resolutions were passed at the meeting:—

(1) That it was not advisable that the fund to be raised in the county should be utilised for the assistance of institutions already in existence; (2) that a fund be raised to be known as the King Edward VII. Tuberculosis Prevention Fund, and that it be utilised from time to time towards the cost of general measures for combating tuberculosis; and that (3) having regard to future possibilities, it is not considered expedient to expend any monies in the erection of a sanatorium at present.

Feb. 20th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

King Edward West Riding Memorial Fund: Special Effort in connexion with the General Infirmary at Leeds.

A MEETING convened by Lord Harewood, Lord Lieutenant of the West Riding, after consultation with the Lord Mayor of Leeds, was held in the town-hall, Leeds, recently, at which it was decided that the most appropriate memorial the West Riding could raise to the memory of King Edward would be a large fund for the subsidising of the hospitals in the West Riding. It was specially emphasised at the meeting that it was not desired in any way in thus making a general fund to interfere with or dilute the efforts of the larger towns in the same direction, and it was arranged that anyone who became a subscriber to the general fund could allocate his subscription to any hospital or infirmary in which he was more particularly interested. For some time it has been known that a large appeal would require to be made on behalf of the General Infirmary at Leeds, and the chairman, Mr. Charles Lupton, as the result of a personal canvass which he has undertaken, has secured promises of £56,000 towards the funds of that institution. The Lord Mayor of Leeds, Mr. W. Middlebrook, M.P., and Mr. Lupton, having held a consultation on the matter, the former called a meeting of those interested in the infirmary, and made the proposal that Leeds should coöperate with the West Riding in raising a large sum, and that the citizens of Leeds should be recommended to allocate their subscriptions to the uses of the General Infirmary at Leeds. This was agreed to, and the handsome nucleus of £56,000, all of which, of course, is allocated to the infirmary, goes to swell the West Riding fund. Since the opening of the Lord Mayor's fund this special Leeds portion has increased to nearly £70,000. No worthier memorial could be raised to the honoured memory of our late King, and it is earnestly to be hoped that throughout the Riding strenuous efforts will be made to secure a sum worthy of the occasion and in some degree adequate to the magnitude of the demands. In regard to the General Infirmary at Leeds, so well known throughout the country, it may be well to note that its development has been steady and rapid since that memorable occasion, now 143 years ago, when the following minute of a meeting held in an inn in Upperhead-row marked its inception: "That Mr. Andrew Wilson's house in Kirkgate be taken for an infirmary at £16 by the year." The buildings, sites, and furniture of the infirmary now represent a capital expenditure of £250,286, and there is urgent need for further extension and development. The expenditure is in excess of the income, and is bound to increase when these extensions are carried out. Among the more important requirements are the provision of four new operating theatres, the extension of the laboratory and pathological departments, the provision of additional accommodation for nurses, the provision of two additional wards, and the modernising of some of the wards. It must be remembered that the greater part of the present building is now about 45 years old, and structural alterations and repairs become decade by decade an increasing source of expense. The recent fire at the infirmary, happily unattended with loss of life, which was commented on in your columns, has emphasised the necessity of there being greater facilities for the removal of the patients in the event of a catastrophe, and has drawn attention to the existence of certain defects in construction which may be removed at some expense, and which must be rectified if all due precautions are to be taken against such a disaster. It had therefore some months ago been decided by the authorities of the infirmary that an appeal should be made to the public of Leeds, of the West Riding, and of Yorkshire generally for a sum of not less than £150,000. Unless this is forthcoming there must of necessity be some arrest of development and some crippling of the work of this, the greatest of the charities of Yorkshire. The appeal is to Yorkshire, but it must be remembered that many of the patients who are treated within the walls of the infirmary, both on the medical and on the surgical side, come from beyond the limits of Yorkshire, and it is hoped that many subscriptions may be obtained from areas outside that of the three Ridings. The connexion of the infirmary with the medical school, now a part of the University of Leeds, has been productive of much mutual benefit, and all who are acquainted with the methods of medical education will cordially endorse the statement that it is doubtful if there is a single family in Yorkshire which cannot trace some benefit it has received to the work carried on at the Leeds Infirmary. The infirmary is fortunate in having at the head of its board, in the person of Mr. Charles Lupton, a man thoroughly versed in hospital management and fully alive to the necessity of continuous development along the lines of scientific advance. He has, as he remarked once to your correspondent, determined that, when the time comes for him to resign the important position he holds he must have the satisfaction of feeling that the General Infirmary at Leeds is an institution thoroughly modern in equipment and abreast with the best standard of efficiency.

Feb. 20th.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Durham University College of Medicine.

THE annual Court of Governors of the above College was held on Feb. 9th, under the presidency of Sir George Hare Philipson. Amongst others present were Councillor Johnstone Wallace, Alderman Sutton, Mr. Cecil Cochrane, Professor R. Howden, and Professor R. P. R. Lyle. Apologies for absence were read from the Duke of Northumberland, Viscount Ridley, the Lord Mayor of Newcastle, Sir Hugh Bell, and Mr. A. F. Ericsson. The annual report was read by the secretary, Professor Howden, and stated that during the past year the College had been recognised by the Board of Education as a technical institution and had received a grant of £36. It was confidently hoped that the grant for the current year would be much larger. In order to clear off a deficit which had been made necessary by the establishment of a suspense account, which the Board of Education desired, an appeal had been made for subscriptions which so far had resulted in the collection of £1229. The entry of students was satisfactory, though not quite up to the previous year. Mr. H. Brunton Angus had been appointed lecturer in surgery; Dr. T. Beattie professor of therapeutics, and Dr. William E. Hume lecturer in materia medica. Mr. Frank Howson, the lecturer in physiology, had been appointed to a post in the University of Sydney and steps were being taken to appoint a successor, while the Joint Pathological Board of the Royal Victoria Infirmary and the College of Medicine had advertised for an assistant to the professor of pathology. The report was adopted on the motion of Sir George Hare Philipson. At the council meeting of the College a letter was read from Dr. H. E. Armstrong, stating that, owing to pressure of public engagements and other circumstances, he had decided to resign his position as lecturer and examiner in hygiene, but he would hold office until the end of September. The letter was received with regret and a suitable resolution was framed and carried referring to Dr. Armstrong's valuable services over the long period of 38 years to the College and the esteem in which he was held by his colleagues.

Past and Present Students' Dinner, College of Medicine.

This dinner was held on Feb. 15th, the guest of the evening being Mr. W. Arbuthnot Lane, of Guy's Hospital, London. The chair was occupied by Mr. H. B. Angus, and the company included Sir George Hare Philipson (President of the College), Professor Howden, Professor Lyle, Professor Bolam, and Professor Hutchens. After the loyal toast, the health of the guest was proposed by the chairman, and suitably replied to by Mr. Lane. In the afternoon of the same day Mr. Lane gave an address in the College of Medicine on "Some Methods of Treating Fractures." This was well attended and received with interest and enthusiasm.

Royal Victoria Infirmary.

During the past week there has appeared in the local press a short statement that the difficulties between the honorary staff and the house committee had been settled. Owing to the decision of the honorary staff to maintain silence as to its differences with the committee no information other than sketchy references to the matter in the newspapers has been available. It appears, however, that in December last the honorary staff took exception to some statements in connexion with a report submitted to the house committee by the patients

admission committee, with the result that the resignation of the staff was handed in. It is now officially stated in the press that the resignations of the staff have been withdrawn, the committee having withdrawn the statements complained of and rescinded a resolution adopted as to a scheme of admission of patients, and that the honorary staff had agreed to meet the house committee to discuss the admission of patients. There is general satisfaction in the city and district over this happy issue from the difficulty.

Feb. 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Medical Society of Edinburgh.

THE annual dinner of the Royal Medical Society of Edinburgh was held in the society's rooms on the evening of Feb. 15th, Dr. Francis R. Fraser, Senior President, being in the chair. The guest of the evening was Sir James Crichton-Browne. The President referred to the unavoidable absence, owing to professional and Parliamentary business, of Sir Robert Finlay, who had intended to be present that night. In proposing the toast of "The Guest" he said that 52 years ago a seat in that hall had been requested for Mr. James Crichton-Browne. A year later that gentleman was secretary of the society, and in the year 1860–61 he had been one of the presidents of the society. Sir James Crichton-Browne, as Vice-President of the Royal Institution for more than 20 years, had endeavoured to acquaint the public with the discoveries of medical and scientific research. Sir James Crichton-Browne, who was received with loud applause, spoke of the memories conjured up in those surroundings by old associations rising from the depths of memory. He spoke at length of the work of one of his *confrères* in the Royal Medical Society, James Bell Pettigrew, who became professor of medicine in the University of St. Andrews, and who was admitted to the Royal Medical Society immediately after he had won the Goodsir gold medal for his essay on the "Muscular Structure of the Heart." He remembered how at one of the society's meetings Pettigrew had vaguely adumbrated his theory of flight, and referred to his discovery of the figure-of-eight movements of the wings of birds and insects—a discovery which, in his opinion, was at the root of modern aviation. In 1873 Pettigrew published his book on "Animal Locomotion," a work which anticipated much which had now been accomplished, and much which was still to come. In conclusion, Sir James Crichton-Browne proposed the toast of "The Royal Medical Society." He referred to the fact that the President that evening was the son of his lifelong friend Sir Thomas Fraser. His earnest wish was that the society might continue to prosper.

Scottish Birth-rate.

In the Registrar-General's returns for Scotland for the quarter ending Dec. 31st, 1910, it is shown that the equivalent annual birth-rate is 23·9 per 1000 of the estimated population, a rate 2·9 less than the mean of the birth-rates of the fourth quarter of the preceding ten years, and the lowest quarterly birth-rate recorded in these reports, that is, since 1855. The equivalent annual death-rate is 14·3 per 1000 of the estimated population, which is the lowest Scottish death-rate of any fourth quarter.

Edinburgh Indian Medical Service Dinner.

There was no Edinburgh Indian Medical Service dinner last year owing to the lamented death of H.M. King Edward. It is proposed to hold the dinner this year as usual at the Caledonian United Service Club, Edinburgh, on the last Friday in May. It is hoped that Sir Alexander Christison will again be chairman. Further particulars may be obtained from Lieutenant Colonel J. Arnott, I.M.S., retired, 8, Rothesay-place, Edinburgh.

Sutherland and Caithness Medical Officerships.

On Feb. 17th a special meeting of the county council of Sutherland was held at Golspie, when a letter from Dr. G. Dick, medical officer of health, was under consideration. An offer had been made by the Caithness County Council and the Caithness County Committee to appoint Dr. Dick medical officer of health and school medical officer for the county of Caithness alone. By reason of the connexion in the matter of the medical officership of health between the two counties there has been some difficulty in arranging matters, and the decision reached by the meeting brings to a satisfactory point negotiations which have been going on for over a year. The meeting decided to separate the posts of medical officer of health for the counties of Sutherland and Caithness, and that the posts of medical officer of health and medical inspector of schools for Sutherland should be held together. It was also decided that a committee of eight members should be appointed to act as a joint committee along with eight members from the county committee on secondary education, with full powers, after Dr. Dick had sent in his resignation, to arrange terms and conditions for the appointment of a medical officer for the combined offices and to make the appointment.

New Perth Infirmary.

The annual meeting of subscribers to Perth Infirmary was held on Feb. 13th. The total number of cases treated last year was 3697, 342 fewer than the previous year. The ordinary income was £4260, and the expenditure £4441, leaving a deficiency of £181, which was, however, covered by legacies received. It is hoped that the new infirmary may be on the way next month. The estimated cost is £36,190, to meet which there is a sum of £33,012 available. Private offers have been made for the present infirmary, but the directors mean to expose it for public sale.

Death of Dr. Duncan Sinclair Kennedy of Perth.

The death of Dr. Duncan Sinclair Kennedy occurred at his residence, Perth, on Feb. 17th, at the age of 60 years. Dr. Kennedy was a native of Oban, and went to Perth 30 years ago, when he took over the practice of the late Dr. Nairn. He held for several years the post of indoor medical officer for the Perth parish council. He was also public health and medical officer of the burgh of Auchterarder. He was at his death an elder of St. John's parish church, which he joined from the "Wee Frees," being out of sympathy with their leaders. Dr. Kennedy was highly respected in the community. He leaves a widow and a grown-up family.

Medical Officer Appointed to Aberdeen Poorhouse.

At a meeting of the Aberdeen parish council held on Feb. 14th Dr. Clifford Bell was appointed resident medical officer. Dr. Bell graduated at Aberdeen University in 1896 and started practice in Aberdeen a little over ten years ago, and at present holds the appointment of assistant medical electrician at the Aberdeen Royal Infirmary. The duties of the new medical officer have been embodied in a set of rules. With regard to post-mortem examinations it is provided that he shall make a post-mortem examination of a body when called upon to do so by the procurator-fiscal, or if the procurator-fiscal intimates that he does not require a post-mortem examination, he shall make such examination if he is of opinion that it is necessary, provided always that the consent of relatives (if any) has first been obtained. It is reported by the poorhouse committee of the Aberdeen parish council that the following letter has been received by the inspector from the Local Government Board:—

> With reference to your letter dated 11th inst., I am instructed to say that the Board are gratified to learn that the parish council of Aberdeen have decided to appoint an additional resident medical officer at Old Mill Poorhouse. The Board accordingly sanction a salary for the senior resident medical officer at the rate of £200 per annum, in addition to board and apartments. Kindly inform me what amount it is proposed to claim against the medical relief grant in respect of board and apartments. I append a note showing what is allowed in similar circumstances in other poorhouses.

With regard to the last paragraph of the above letter the board recommends that £1 per week should be claimed for the board and lodging of the male resident in the Aberdeen poorhouse. This is the charge made against the Government grant for the resident's board in Dundee East poorhouse, Craiglochart, Craigleith, Stobhill, and Barnhill poorhouses, as seen from the list accompanying the letter.

Feb. 21st.

CATS AND DIPHTHERIA.—Mr. H. Ubsdell, the medical officer of health for the Buckfastleigh (Devon) urban district council, in his annual report for 1910 states that during the year 17 cases of diphtheria were notified. Mr. Ubsdell is of opinion, verified by post-mortem examination, that three of the cases were due to contagion from a cat.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Medical Association and Parliamentary Representation.

THE Irish Medical Association, in common with other professional bodies, has often felt the disadvantage under which medical men suffer in their lack of representation in Parliament. For some time it has had under consideration the best method of obtaining for the interests of the profession in Ireland a hearing in the House of Commons. At the last meeting of the council of the association the following resolution was passed unanimously :—

That we are in favour of approaching at least two Members of Parliament to represent the interests of the Irish Medical Association in Parliament.

It is understood that the council is already in touch with two Members of Parliament, one on each side in party politics, who are willing to act as spokesmen for the profession when matters concerning its interests are under discussion.

Boycotting of Irish Qualifications.

The Council of the Association of Fellows of the Royal College of Surgeons in Ireland, a body which charges itself with the protection of the interests of the Fellows, has recently brought out a pamphlet dealing with the exclusion of candidates holding Irish qualifications from competition for certain posts in English hospitals. Detailed reference is given to the case of the Manchester Royal Infirmary which recently demanded Fellowship of the Royal College of Surgeons of England as a necessary qualification for candidates for an assistant surgeoncy. It is stated that similar demands have been made by the Queen's Hospital for Children, Bethnal Green ; Cancer Hospital, Fulham-road ; Seamen's Hospital, Greenwich ; King's College Hospital, London ; Manchester Children's Hospital ; and the Royal Waterloo Hospital, London.

Infective Disease in Dublin.

The outbreak of infective disease shows some signs of abatement, coincident, apparently, with the close of the dry spell which had lasted nearly since the beginning of the year. The death-rate from all causes for the week ending Feb. 11th was 30·6 per 1000 per annum, and from infective diseases 2·3 per 1000 per annum. From the beginning of the year up to Feb. 15th 63 deaths have taken place from the four diseases—scarlet fever, diphtheria, typhoid fever, and whooping-cough. Measles was responsible for many more. Sir Charles Cameron, medical officer of health, has addressed a letter to the daily papers stating that most of the cases of disease have been among the middle classes and well-to-do working people rather than among the very poor, and on the outskirts of the city rather than in the slums.

Compliment to Sir Charles Cameron.

A special meeting of the Dublin city council was held on Feb. 20th to witness the signing by Sir Charles Cameron of the roll of honorary burgesses of the city, and to present him with a casket containing the certificate of honorary freedom. The resolution conferring the honour on Sir Charles Cameron had been passed some months ago. Sir Charles Cameron, who is 80 years of age, has been medical officer of health of Dublin since 1862.

Honorary Medical Degrees.

At an extraordinary meeting of Convocation of the Queen's University of Belfast, held in the large hall of the University on Feb. 4th, the Right Hon. Thomas Sinclair, presiding over a large attendence, Dr. R. W. Leslie proposed, and Dr. W. Calwell seconded, the following resolution, of which due notice had been given :—

That we, Convocation of Queen's University of Belfast, emphatically protest against the disability imposed on the University by the Statutes, Chap. XXXIII., Clause (j), which prohibits the conferring of honorary degrees in the Faculty of Medicine; and, having regard to the fact that this privilege was exercised respectively by the old Queen's University and by the Royal University throughout their careers and is enjoyed to-day by the University of Dublin, by the National University, and by the Royal College of Physicians and Surgeons in Ireland, we call upon the Senate to take such steps by appeal to the Privy Council or otherwise as will remove this anomalous disability.

The resolution was passed unanimously. In Ireland every university and examining medical college has had in the past the power of conferring a honorary medical degree or Fellowship. When the Royal University was abolished and in its place the two new institutions—the National and the Queen's Universities—were established, the Commission which drew up the statutes of the National University—presided over by Chief Baron Palles, and of which Dr. B. C. A. Windle and Dr. D. J. Coffey were the medical members—gave that body the option of conferring honorary medical degrees ; while the Belfast Commission, of which Sir Donald MacAlister, K.C.B., and Dr. J. Symington were the medical members, drew up the following Statute :—

The Senate may confer honorary degrees other than degrees in the Faculty of Medicine upon persons of distinction in letters, art, science, professional life, or the service of the public, and upon eminent benefactors of the University.

This provision, which distinctly forbids the conferring of honorary medical degrees, has caused great dissatisfaction to the medical profession in the North of Ireland.

Sanitary Congresses in Ireland.

The public health committee of the Edinburgh town council has decided not to send delegates either to the Conference of the Royal Institute of Public Health in Dublin next August, or to the Royal Sanitary Institute Congress in July at Belfast. The holding of two conferences in one year is looked upon as a needless waste of expenditure. It certainly seems ridiculous to hold two sanitary congresses in Ireland in two successive months.

Feb. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Military Medical Officer threatened with an Action-at-law.

AN officer of the colonial military force who has been under treatment at the Hospital of Val de Grâce, in Paris, since April, 1907, has recently made application to the Procureur of the Republic for legal assistance to enable him to bring an action for damages against a member of the medical staff of the hospital. He was admitted on account of spasmodic paresis of the upper limbs and he complains that the medical man treated him with injections of excessive doses of anilarseniate of soda, the result being that he immediately lost the use of his lower limbs. An inquiry which was held in February, 1909, by the Minister of War exonerated the medical man, but the patient says that he is applying to the law courts because the inquiry was biassed and he had not an opportunity of proving his statements.

A New Application of Radiography.

At a recent meeting of the Academy of Sciences M. Vaillant said that by means of radiography it was, he believed, possible to ascertain whether an infant had lived or not. When the infant had been born alive the abdominal organs—i.e., the stomach and intestines—were visible in the radiographic picture, but when the infant had not been born alive these organs were not shown in the picture.

Chronic Appendicitis simulating Pulmonary Tuberculosis.

In a communication made to the Société Médicale des Hôpitaux on Jan. 28th M. Faisans said that he had frequently observed patients who presented many of the signs of pulmonary tuberculosis, such as loss of flesh during successive short periods, progressive lassitude, pain in the right side of the back, cough without expectoration, long-continued pyrexia, and short febrile attacks after walking. In some cases there were physical signs in the lungs, including subcrepitant râles, a rough murmur at the right base, and a diminution of the vesicular murmur at the right apex. These physical signs did not last long, rather taking the form of sudden short attacks. The symptoms might lead to an erroneous diagnosis of tuberculous disease of the lungs, but they were in reality often due to chronic appendicitis, and the usual signs might be elicited at MacBurney's point. M. Faisans said that these patients ought to be operated on, the result being usually favourable, and one of the subsequent speakers, M. Comby Siredey, concurred in this opinion.

Treatment of Cerebral Tumours.

Speaking at the same meeting, M. Sicard described some cases of cerebral tumour in which localised cranial headache, either spontaneous or elicited by percussion or the use of a

large tuning-fork, served to indicate the position of the new growth. He spoke very highly of the information which radiography was capable of giving with regard to both the nature and position of the tumour. A whitish mark on the negative plate, indicating rarefaction and osseous eburnation, made it almost certain that the tumour was malignant. With regard to treatment, he advised decompressive craniectomy. He also recommended the judicious employment of lumbar puncture as a means of accustoming the nervous centres to the shock of operation. When the growth was comparatively superficial he was in favour of applying radiotherapy through an aperture in the cranium, the nervous ectoderm being less sensitive to the X rays than the cutaneous ectoderm.

Freund's Operation for Pulmonary Œdema.

Two patients on whom M. Tuffier had performed Freund's operation for pulmonary œdema have been shown by him at a meeting of the Surgical Society. The operations had taken place more than 18 months ago. The first patient was a woman, aged 28 years, who when she came under M. Tuffier's care was no longer able to work and had to pass her time sitting up in bed. He resected the first, second, third, fourth, fifth, and sixth costal cartilages on the right side, and since that time she had been able to earn her livelihood without a single day's interruption. The second patient was a man in the state of cyanosis and permanent respiratory anxiety characteristic of the last stage of emphysema. M. Tuffier performed bilateral resection of all the costal cartilages, and the man has now for two winters been employed as the chauffeur of a taxicab without having ever had to leave off work.

Treatment of a Bullet Wound of the Stomach.

At a meeting of the same society M. Hartmann communicated on behalf of M. Baudet a case in which a woman was shot with a revolver on a level with the eighth left intercostal space. Vomiting of blood showed that the bullet had penetrated the stomach. At the end of two and a half hours after the injury an incision was made parallel to the costal margin, the cartilages were divided as far as the seventh rib, and a flap which was made was turned up; the wound where the bullet entered the stomach then came into view and was sutured. The patient recovered. M. Hartmann called attention to the fact that only one wound of the stomach had been sutured, although there must have been another, because radiography showed that the ball was lodged near the vertebral column.

Number of Medical Students in France.

According to the official report, in the year 1910 there were 3756 registered students of medicine, being an increase of 346 over the number for the previous year. These 3756 students included 3330 men and 426 women; classified according to nationality, there were 3020 French students, of whom 124 were women, and 736 foreigners, of whom 302 were women. Of the total number of students, one-fifth were therefore foreigners.

Feb. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Statistics of the German Universities.

ACCORDING to the *Deutsche Medizinische Wochenschrift* the number of students attending the German universities has increased from 13,000 in 1871 to 54,822 in the present year. From 1910 to 1911 there was an increase of 2415, the same as for 1909 to 1910. A similar desire for a university education exists in foreign countries also: in France, for instance, the number of students is estimated at about 42,000. Of the students in the German universities, 52,404 are men and 2418 are women, as compared with 50,557 men and 1850 women in the previous year. The number of medical students is rising, being 11,240, as compared with 10,135 in the previous year and 8088 five years ago. A similar increase has occurred among the students of philology, philosophy, and history. The number of students of theology, which has of recent years been lower than in any preceding period, begins to rise again, being 2535 for Protestant and 1766 for Roman Catholic theology. The number of law students has decreased from 12,160 to 10,890, that of dental students from 1395 to 1146, and that of pharmaceutical students from 1279 to 954. The three largest universities are those of Berlin with 9686 students, Munich with 6905, and Leipsic with 4900 students; the three smaller are those of Erlangen with 1011 students, Greifswald with 948, and Rostock with 816. In addition to the duly matriculated students 3528 men and 1772 women were granted permission to attend the lectures, so that a total number of 60,552 persons received instruction in various branches of knowledge at the universities. Of the matriculated students, 841 men and 103 women were foreigners, of whom no less than 406 men and 74 women were Russians; 39 men and 8 women were British; and 145 men and 65 women were American. The number of women students continues to increase, so that they now form 4·4 per cent. of the general body of students as compared with 3·5 per cent. in the previous year. The distribution of the women students among the various faculties of the universities is as follows: 1370 are students of philosophy, history, and similar subjects, as compared with 975 in the previous year; 527 are medical students, as compared with 476 in the previous year; 356 are students of mathematics and natural sciences, as compared with 287 in the previous year; 49 study dentistry; 60 study political economy and agriculture; 7 study theology; and 5 study pharmacy. The female students show a decided preference for the University of Berlin, 806, or about one-third of the total number of female students, being matriculated there. Together with the 1772 who, without being duly matriculated, are admitted to attend the lectures, the female students at the German universities have now reached the record number of 4184.

Conviction of a Quack.

Prosecutions of irregular practitioners in Germany have hitherto usually resulted in an acquittal, but in a recent case the offender was less fortunate. The circumstances were as follows. A woman suffering from a cancer of the mamma had consulted a surgeon who advised an operation. She then saw a well-known quack, who said that she could be restored to health by medicine without operation and he prescribed something for her, but she died within a year. The public prosecutor then charged the quack with having caused death by negligence. When brought to trial the accused pleaded that the success of an operation for cancer was always very doubtful, and that the woman might have died from the cancer even if she had been operated on. The surgeon gave evidence to the effect that the disease was in an early stage when he first saw her, that he had advised an operation, and that in his opinion the performance of the operation would have postponed the fatal issue for some years. According to his experience and that of other surgeons he was sure that the patient might have been saved, or at least the fatal issue postponed for years, if she had been operated on in due time. The court found the prisoner guilty of having caused death by negligence and condemned him to six months' imprisonment. This decision is rather remarkable as the courts have hitherto, as a rule, given a verdict of not guilty when a quack was charged not with direct neglect but only with giving wrong advice as in the above case. In Germany there is an unfortunate tendency to sympathise with medical impostors, and the confidence which some of the better classes place in them has even been shown during the discussions on the new anti-quackery Bill now under consideration by a committee of the Reichstag.

Malignant Growths treated by Radium.

At a recent meeting of the Berlin Medical Society Dr. Arendt read a paper on the effects produced by radium rays acting on malignant growths of the female genitals. For this purpose he used an ore of uranium obtained from Joachimsthal in Bohemia. The powdered mineral was put into an elongated pouch made of a very thin flexible material, and this pouch, after being coated with iodoform, was introduced into the vagina. At the commencement of the treatment the carcinomatous tissue must be removed as much as possible by means of a curette, and then cauterised with Paquelin's apparatus. The application of the radium-containing substance was begun two days afterwards, the pouches being changed every third day. The treatment had a distinctly palliative effect, checking the discharge and fœtor and relieving the pain. Complete recovery from the disease was, of course, not to be expected, but in inoperable

cases the patient's general condition improved to some extent and there was obvious mitigation of the symptoms.

A Colony for Children Suffering from Whooping-cough.

A limited liability company was recently formed for the purpose of establishing on the shore of the Baltic a health resort for children suffering from whooping-cough. Hitherto those children when a change of air had been prescribed for them by a medical man were usually taken to some place on the seaside or in the mountains, where they associated with healthy children, who were thereby liable to be infected; it moreover often happened that the patients were requested by the hotel proprietors to take their departure as soon as the nature of the disease was known. In order to avoid these risks and inconveniences the above mentioned company undertakes to form a kind of colony where only families with children suffering from the disease will stay. The establishment will include a number of isolated houses, each for one family; playgrounds and other opportunities for recreation will be provided and there will be a large separate kitchen in which all the food will be prepared. The colony is at some distance from other habitations as well as from any frequented main road. It is, of course, intended for well-to-do people only, but if the undertaking proves successful similar institutions for children of the humbler classes will no doubt be established by some of the municipal authorities.

Radium in the Treatment of Gout and Rheumatism.

In a communication to the Berlin Medical Society Professor His not long ago gave an account of the results which he had obtained in the treatment of gout and rheumatism by radium. He said that of 100 patients who had been under his care suffering from chronic rheumatism 50 per cent. showed an obvious amelioration, a great number showed a remarkable improvement, and five recovered completely. All the cases were very severe and had been treated without success by other methods. The success obtained in 28 cases of gout was still more striking, as only four showed no change, whilst of the remaining 24 some were considerably improved and some recovered completely. The differential diagnosis between chronic rheumatism and genuine gout was sometimes rather difficult; he maintained it was essential to examine the blood as to the presence of uric acid. In cases of real gout the uric acid generally disappeared under the radium treatment in a period varying from a few days to several weeks, its gradual diminution being accompanied by an improvement in the clinical symptoms. With regard to the administration of radium Professor His recommended the inhalation of radium emanation, a procedure in which the patients must spend two hours daily in an "emanatorium." The administration of a fluid containing radium by injections made in the neighbourhood of the affected joints was also very efficacious. Radium influenced metabolism and, moreover, made the ferments of the organism active. It was, of course, not a panacea for every case of gout; in inveterate cases accompanied by osseous ankylosis of the joints success could not be expected. The dose must be graduated according to the state of the individual patient. In the discussion Dr. Fürstenberg called attention to the soporific action of radium. Dr. Gudzent said that after the use of radium some patients fell asleep, but others on the contrary became excited.

Feb. 20th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Limitation of Families and the Superior Hygienic Committee.

THE census held in the first two weeks of January, 1911, has had the unexpected result of showing that the increase of the population is far from being satisfactory. In large towns the general increase is not more than from 10 to 15 per cent., whilst in small provincial towns it varies from 3 to 5 per cent., and there are villages the inhabitants of which have even decreased in number during the last decade in consequence of emigration. This state of affairs has naturally caused some uneasiness among those who regard increase of population as an indication of national prosperity. The first and most obvious cause of the diminished rate of increase is emigration. Although multitudes of emigrants come back penniless from America, hundreds and hundreds continue to ask for emigration passports to that country. Another factor in the question is the dangerous spread of the "only child" system, which is threatening to place us in a position similar to that of France some 10 or 15 years ago. It seems strange that the hygienic authorities of the State should be so apathetic as they are in regard to this problem, for it might be possible to convince some delinquents of the error of their ways, and popular lectures on the perils of artificially induced abortion might act as a deterrent. In some parts of the country, as, for instance, in the county of Baranya, ordinary peasant women can manipulate the uterine sound (or a catheter) for the purpose in question with admirable skill, observing all the rules of antisepsis in their work. The police are aware of these facts, but can do nothing because offenders evade detection by performing these operations mostly in the second or third month of pregnancy, before the woman's condition has become noticeable. Hungary being an agricultural country the shortage of able-bodied men is especially felt by farmers and landed proprietors—so much so indeed that last summer in some parts of the country harvesting had to be put off from week to week for want of hands. This fact induced the board of the "National Hungarian Agricultural Society" to ask the Government to take some measures against this national peril which in popular language is called "egyke" (onelet, only child). They were particularly desirous that the Government should prohibit the sale of articles for the mechanical prevention of conception (*condomes*), which, according to the board, are mostly to blame for the prevalence of the only child system. The question being to some extent connected with public hygiene the Government requested the Superior Hygienic Committee to give an opinion thereon. The text of this opinion was compiled by Dr. W. Tauffer, professor of gynæcology at the University of Budapest, who acknowledged that the law relating to artificially induced abortion is rather lax, and promised that the committee will also see that in future the medical students in the University and the midwives in the midwifery schools shall be instructed to enlighten their patients as to the dangers and evil consequences of artificial miscarriage. In discussing the general subject of the limitation of families Professor Tauffer said that, in his opinion, the increase of population, looking at it from a hygienic point of view, was a question of food-supply only, for the propagating rate of mankind, when left to itself, tended to rapid increase, but the supply of food was limited and increased but slowly. In consequence of these views being generally accepted heads of families were now becoming anxious to limit the number of their descendants. Professor Tauffer further remarked that criticism of the means with which ministers of religion, moralists, politicians, whether military or agrarian, and capitalists tried to check the spread of this habit was not the task of the Superior Hygienic Committee. The publication of Professor Tauffer's opinions gave rise to acrimonious discussions in the newspapers, the agrarian party being prominent in expressing their dissatisfaction with his views, and in bringing this to his notice they did not select the politest phrases. Even in the dignified *Figyelo* there is a long article wherein Professor Tauffer's opinion is discredited and his teaching condemned. Count Apponyi, the late Minister for Public Instruction, has challenged the advocates of restriction to meet him in a discussion on this question, but Professor Tauffer has told an interviewer that he would not enter into a controversy of that kind with Count Apponyi, who is not a medical man. This agitation has induced Francis Herczegh, a sympathiser with the agrarian party and the foremost Hungarian dramatist and novelist, to write a long article with the title "Marginal Notes to the Only-child Question," wherein he seeks to prove the errors of Professor Tauffer's opinion. In the concluding part of his article he says that the essential condition of the medical calling is the defence of the principles of life, and that only on such grounds could medical men be entrusted as they are with powers greater than those of any other human authority. After denouncing the attitude of the Superior Hygienic Committee he expresses a hope that the Hungarian medical men will not be influenced by that pernicious example, but will follow the path in which they are led by their knowledge, conscience, and patriotism. In reply to this critic Professor Tauffer has

published a rejoinder in which he says that the physical well-being of the people, their education, the increase of public wealth, the improvement of the hygienic administration of the country, the inspection and disciplining of individuals dealing with obstetrics, the directing and controlling of the nursing hygiene of infants,—these are some of the things most urgently required to be done, and as a result of them a numerical increase of the population of the country may be expected, even if the births do not increase in the same proportion.

Feb. 18th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Successful Removal of a Subdural Tumour of the Spinal Tract.

Dr. O. Veragut, *privat-docent* on neurology in Zürich, and Dr. H. Brun, surgeon in Lucerne, report on the following interesting case in the *Korrespondenzblatt für Schweizer Aerzte* of Nov. 20th and Dec. 1st, 1910. The patient was a man, aged 32 years, a widower, with one healthy boy, aged 3 years; his wife died from consumption and one of his brothers from tuberculous hip disease. Four years ago he was under treatment for consumption, but was afterwards able to continue his work. In December, 1909, he complained of stiffness and pain in the nape of the neck and left shoulder; in January, 1910, of numbness of the left arm which disappeared again, but afterwards the arm felt weaker. Later the right also felt numb and weak. He felt himself growing gradually weaker. At the end of January a burning sensation was felt in the nape of the neck and a burning sensation round the navel, also drawing pains in the left leg. The apex of the left lung was retracted and dull to percussion; catarrhal sounds were heard; tubercle bacilli in small quantities were found in the sputum. The patient held his head forward in a stiff manner; on rotation he complained of pain. Pressure on the head and spine was painless. Roentgen ray pictures showed a normal condition. There was hypæsthesia over the left shoulder. Passive movements of the left thumb and fingers were not perceived if the patient shut his eyes; he could not distinguish small objects placed in his left hand. There was contraction of the pectoral and teretes muscles. Abduction of the left arm was deficient; adduction with the elbow bent was less energetic than on the right side. Spontaneous fibrillary movement was seen in the deltoid and triceps muscles. The muscular power of the upper arm was considerably diminished. Spontaneous flexion and extension of the arm at the elbow-joint were executed very incompletely and with difficulty. The left leg trembled in the standing position and there was slight spasm in walking. The faradic and galvanic reaction of deficient muscles was normal. The triceps reflex on the left side was increased, as were also the periosteal and tendon reflexes. Slight pressure in the lacertus fibrosus of the upper arm on the left side caused rotatory clonus (clonic rotatory contractions) which ceased with the pressure. This clonus could only be produced in half-abduction of the upper arm and rectangular flexion of the elbow. The patellar reflexes on both sides were increased and there was clonic foot spasm. The Babinski sign and Oppenheim sign were present on the left side only. A diagnosis of tumour in the spinal cord compressing it at the level of the fourth cervical segment was made. The examination of five cubic centimetres of cerebro-spinal fluid proved negative. (Hygiene Institute of Zürich: Professor Silberschmid.) By Feb. 17th hypæsthesia over the left shoulder was more complete. There was reduced sensitiveness of the whole right side from the fourth cervical segment downward, but no feeling of vibration (tuning fork), except in the shoulder on the right side. On the left side this was present, and was only absent round the patella and on the shoulder. Astereognosis was total on the left side, partial on the right. The left arm could only be moved at the finger-joints. Passive movements were resisted. The right arm had less power. The left leg could only be slightly moved at the hip and knee. The power of the right leg was reduced. The patient walked like a case of spastic hemiplegia. Shortness of breath, due to paresis of the left phrenic nerve, was present, corroborated by Roentgen ray examination; respirations 27 per minute. As regards the left arm, the triceps, periosteal, and tendon reflexes were increased. The rotatory clonic spasm supervened in every position of the arm, and on slight pressure, also on tickling the left foot. The Babinski sign was present on both sides, and Oppenheim's sign only on the left side. The cremasteric reflex was present on the right side. The abdominal reflexes had disappeared. By Feb. 18th the left arm was totally anæsthetic. A diagnosis of a localised meningitis was excluded by the normal condition of the cerebro-spinal fluid. The slow progress of symptoms pointed to a growth of intradural but extra-medullary position, probably a sarcoma or fibro-sarcoma. On Feb. 18th, 1910, under ether narcosis, an operation was performed. The third and fourth spinous processes were removed and the laminæ resected. Hæmorrhage was successfully treated by compression. The dura mater was normal, not thickened, and the subdural cavity was empty. No pulsation of the cord was seen. No tumour. The medulla was slightly thickened over the third segment. Slight injection of the blood-vessels of the pia mater was present. Palpation revealed a greater resistance, pointing to circumscribed intra-medullary tumour. The pia mater was incised and there appeared a small spot 2 millimetres in circumference, the yellow colour of which contrasted with the white nerve substance. A small tumour of the shape of a hazel-nut was peeled out of the medulla like the yelk out of a hard-boiled egg. Scarcely any hæmorrhage occurred. The medulla began to pulsate again. The pia was replaced and the dura carefully sutured with silk. Catgut sutures of soft parts were used and the wound was drained. The tumour weighed 1¼ grammes, = 20 grains. Dimensions, 17 mm. by 11·5 mm. by 9·5 mm. Professor Schmid, of the Pathological Institute of Zürich, found it to be a solitary tubercle with thick elastic capsule. The patient breathed much more freely on recovering from narcosis. After eight hours feeling returned slowly in the left shoulder and arm. The gradual recovery was indicated in the original paper by tabulated reports and numerous diagrams. The patient was discharged on the fifty-sixth day after the operation and began work as a telephone operator. On June 26th he walked four miles as well as a healthy subject, and could lift a chair with his left arm. Slight differences of sensibility in the hand still existed.

Feb. 18th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Pneumonic and Septicæmic Plague Epidemic.

SINCE my last letter events with regard to the spread of this epidemic have marched rapidly, and you will doubtless have read many telegraphic reports in the lay papers. As far as medical records go this epidemic differs in several particulars from previous plague outbreaks—e.g., in its influenza-like infectiousness, its invariably fatal issue, its types, and its incidence. At the present moment it is accounting for 500 deaths daily, and there is no evidence that it is in any way abating.

History of the epidemic.—The first signs of plague occurred in the mountainous north-west region of the province of Manchuria. It is said to have originated among the trappers of the *tarabagan*, a small marmot-like rodent, the fur of which is exported to Europe through the station of Manchuria on the Trans-Siberian line. In the summer months the Chinese population of this district, which amounts normally to about 3000, is augmented by some 50,000. In a report of Nov. 24th last it was stated that up to that time 300 persons had been afflicted with plague, not a single one of whom had recovered. It is said that the precautionary and antiplague measures adopted, in the first instance, by the Russian authorities at Manchuria station were of an indifferent order. Be that as it may, by the time the epidemic spread to Harbin the Russians had become alive to the situation and have since done all that was possible. A perusal of the various reports gives ample ground for saying that if the Chinese officials had fallen in with the active measures proposed by the Russians at Harbin the epidemic most probably would have been limited to North Manchuria. But the Chinese prefect (who has since been cashiered) showed himself obstructive and lax to a degree, refusing assistance to the authorities, and allowing the Chinese of the now

thoroughly infected district to use the south bound railway. Fu-Chia-Tien, the Chinatown of Harbin, speedily became a hotbed of plague, and the absence of all restrictions in the way of segregation and quarantine has been followed by the steady spread of the epidemic southwards along the railway. From Changchun it spread to Mukden, and from there south-east to Dalny and south-west to Shan-hai-Kuan, where it passed through the Great Wall into China. Yung-ping-fu, a country town a short distance south of Shan-hai-Kuan (the portal of the Great Wall), became infected, and cases have occurred at Tientsin and Peking. From Tientsin it spread down another railway into the heart of the province of Shantung; and from Peking the infection spread by the Peking-Hankow railway S.S.W. to Paoting-fu and Lung-hua-Tien, on the way to Mid-China. By steamers and native traffic infection was carried across the Gulf of Chihli to Chefoo. And now it remains to be seen if it will maintain its virulence till it reaches the humid zone of Mid-China, with all its teeming millions of people. Up to the time of writing the spread in Tientsin and Peking, two large cities, has been very slow, being limited in each to a mere handful of cases, the contacts from one infection.

Character of the epidemic.—Although Chinese figures indicate a certain number of recoveries, all the information given by foreign medical men on the spot points to a mortality of 100 per cent. Rats and fleas do not come into the question as propagators; there has been no noticeable mortality among the former. The transmission has been, like influenza, from man to man, and by direct contact with excretions, or indirectly through the air by the breath and moist particles a few yards round the patient. The majority (about 90 per cent.) of the cases have been of the pneumonic variety, the rest septicæmic plague. The following extract from a letter to me from Dr. W. H. Graham Aspland, now on plague duty at Harbin, gives an idea of the conditions there: "Daily mortality during past week 160; about 40 to 60 die in our hospitals, the remainder picked up by our sanitary men in the streets. In the Russian quarter 40 to 50 deaths daily. Duration of disease after becoming suspects is 2 hours to 2 days. All pneumonic and septicæmic cases with temperature 104° are found going about the streets and declare they have no sickness. Three hours after they are dead. It is simply incredible. Such a condition of life and death is unparalleled in its severity." Except for the deaths of two European medical men and 25 Russians at Harbin (out of a population of 30,000 Russians) the epidemic has been confined to the Chinese coolie classes. So far not a single death has been noted among the Japanese, of whom there are thousands in Manchuria, many living among the Chinese under very similar conditions—the only difference being that they are a cleaner race. In Fu-Chia-Tien—Chinese Harbin—the reduction in population, according to Chinese official estimates, from plague and departures in consequence of it, is from 40,000 to 15,000. It is impossible for anyone to give figures or say what dimensions the epidemic has assumed, owing to the native habit of concealment, against which the plague officials are unable to fight and before which all attempts at obtaining reliable statistics fail lamentably. The mortality rate may be taken at 99–100 per cent.

Local conditions.—Owing to severe cold in Manchuria the populace remain indoors as much as possible, and in small unventilated rooms which are usually overcrowded. At night they sleep in rows on "k'angs"—raised mud platforms occupying from three- to four-fifths of the sleeping-room. Wrapping themselves in dirty furs and wadded coverlets, four to six people lie together in a confined, close atmosphere that most Europeans would find insupportable. The sanitary conditions of towns in Manchuria are notoriously bad, and the soil is impregnated with filth and unremoved garbage.

Manner of spread.—This is mainly due to the railway (the Imperial Railway of North China). Though the necessary quarantine and inspection measures were not put into force till many people had come through from the infected area, the railway traffic may now be said to be under proper supervision. Foreign medical men are in charge of all the main stations, and by order of the Prince Regent all traffic has been entirely suspended from Mukden in Central Manchuria to the Great Wall. But this has been only a part of the battle. Finding the trains stopped, the Chinese took to the road. Manchuria is invaded every year by thousands of coolies and agricultural labourers from the large provinces of Shantung and Chihli, who go north to earn the high wages prevalent there. With the approach of the Chinese New Year they return in legions, keen to be home for their great annual festival. They will go through fire and water to get back, and it is to such that practically all the cases south of the Great Wall are due. If stopped travelling by train, they tramp the distance by roads—on which no adequate precautions against infection have been taken—and nothing short of the most drastic measures will keep them back. To prevent this flood of coolies pouring into Dairen, the port from which they cross into Shantung, the Japanese have stretched a military cordon across the neck of the peninsula by Kiuchow, and are threatening to strengthen this cordon with a live (electric) wire fence.

In the beginning of January the Imperial Government sent Dr. J. G. Gibb of the Union Medical College to help Dr. Gnoh Lean Tuck at Harbin (to whom I referred in my last letter). Shortly after this Dr. Mesny, the French medical man, became infected while visiting the Russian Hospital and died two days later from pneumonic plague. Since then Dr. Aspland and Dr. J. M. Stenhouse, also of the Union Medical College, have gone up on behalf of the Imperial Government and have been doing all they can to fight the epidemic. At every station down the line medical missionaries have come forward in the most gallant way and borne the brunt in combating the most appalling conditions. At Mukden Dr. A. F. Jackson, of the Scotch Presbyterian Mission, has succumbed to plague, as well as three trained Chinese medical men. The medical profession at the present moment, by these sacrifices and by the number of willing volunteer practitioners, stands higher in the estimation of the Chinese Government than it ever did before. The struggle has been almost entirely in the hands of medical missionaries. If it were not for them China would have to meet this epidemic with a few foreign-trained Chinese medical men of little experience, and lacking in the necessary foresight for preventive measures. The Central Government has been fortunate in having an able and enlightened official at the head of plague affairs. The Honourable Saoke A. Sze (an American M.A.) has from the beginning taken a wide view of the whole question, and if only his orders had been carried out by local officials it is probable that many lives would have been spared. Mr. Sze has concerted with foreign medical men, followed their advice, and by dint of hard work has got quarantine stations established and much preventive work put in hand. The local officials in Manchuria have not only remained apathetic and indifferent but have consistently maintained their dislike and disregard of anything savouring of foreign intervention, even though obviously in their own interests. The Chinese Government has acceded to the request of the Russian Government to appoint an international commission of plague experts from certain Powers. It is doubtful if there are any experts available who can come with an experience gained from similar epidemics, for the local conditions differ very much from those of bubonic plague. No doubt such a commission will be of value later, but for the present there is dire need of foreign medical men at the various stricken towns. The Government offers all local travelling expenses, 300 taels a month (a tael is worth 2*s.* 9*d.*), and an indemnity in case of death of 10,000 taels, to any medical man who may volunteer to help.

Inoculation.—It is too early yet to give figures of the value of Haffkine's prophylactic vaccine. I am at present endeavouring to gather information on this point. Medical advices from Harbin have not spoken favourably of Yersin's serum, though they incline to think favourably of Haffkine's vaccine. There is ample scope for bacteriological work, as it is increasingly felt that the difference in type of the epidemic from those recorded elsewhere calls for the manufacture of vaccine on the spot from the local bacillus.

Peking, Jan. 30th.

ROYAL SOCIETY OF MEDICINE: BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.—After the meeting of the section on Wednesday next, as announced in the weekly diary of events, the members will dine together at 7 P.M. at Pagani's Restaurant, Great Portland-street, W. The charge for the dinner is 3*s.* 6*d.*, and members may bring their friends. Dr. A. Manuel, 14, Clarges-street, Mayfair, London, W., would be glad to receive names of those intending to dine.

Obituary.

JAMES EDMUNDS, M.D. ST. AND., M.R.C.P. LOND., M.R.C.S. ENG.

THE death of Dr. James Edmunds, consulting physician to the London Temperance Hospital, is announced to have taken place on Feb. 16th at Brighton, where he had lived in retirement for some years past. He was born in 1832, and was the eldest son of the Rev. James Edmunds, an independent minister working among the people in the East-End of London. He received his medical education at the London Hospital, where he gained many distinctions, and qualified M.R.C.S. Eng. and L.S.A. in 1854. He took the degree of M.D. of the University of St. Andrews in 1862, and became a Member of the Royal College of Physicians in 1874. He was for 27 years medical officer of health and public analyst of the parish of St. James's, Westminster, and for seven years medical officer of the H division of the Metropolitan Police. After practising in the City of London for some years he interested himself in the question of the use of alcohol in disease, and wrote various papers on the Physiological Influence of Alcohol. He was one of the founders of the British Medical Temperance Association, and its president from 1876–79, and one of the founders of the London Temperance Hospital and its senior physician. He associated himself intimately with Cardinal Manning in the foundation of the Red Cross Temperance Society and with Canon Fleming in the Church of England Temperance and General Benevolent Society. A temperance advocate of great force and earnestness, Dr. Edmunds was not a fanatic, and his contributions to the literature of this subject were of a progressive and enlightening character. Dr. Edmunds was also a reformer in sanitation. He was cholera medical officer at Newcastle and Dundee in 1853, and contributed the article on the Chemical Analysis of Drinking Water in Sutton's "Volumetric Analysis." Another sphere of action in which Dr. Edmunds was a pioneer was the medical education of women. He founded a society called the Female Medical Society, which was merged afterwards in the London School of Medicine for Women, but as he was not in favour of carrying the medical education of women to the point of qualification and registration as medical practitioners he soon retired from his connexion with the movement.

Amongst his contributions to medical journals should be mentioned the article "Will-making in Aphasic Paralysis," published in the *British Medical Journal* in 1900. He then described the case of a lady, 60 years of age, who suffered from partial right-sided hemiplegia and motor aphasia, with agraphia and word-deafness, though the visual speech centre was unaffected, and who desired to make her will. Dr. Edmunds and Mr. Samuel Garrett, the lady's solicitor, devised a method for ascertaining the wishes of the testatrix by means of printed cards. The will was proved in due course in solemn form, the President of the Probate Court signifying his approval of the method adopted.

Dr. Edmunds was a frequent contributor to the *English Mechanic and World of Science* on all sorts of practical scientific subjects. His modification of Wenham's paraboloid illuminator for the microscope, by cutting the top off flat and fixing it to the slide by a drop of glycerine, thereby rendering it an immersion paraboloid, giving a dark background and luminous object, was described and figured in the same newspaper more than 20 years ago. Quite recently the same principle has been applied to the examination of bacteria and protozoa, with very gratifying results.

Dr. Edmunds leaves a widow, three sons (two of whom are members of the medical profession), and a married daughter.

GIUSEPPE MYA.

PÆDIATRY has just lost one of its ablest promoters and masters in Dr. Giuseppe Mya, who held the chair set apart for that subject in the Florentine school.

Born at Turin on Sept. 25th, 1857, he became a student of medicine at the local university, and after passing through the curriculum with distinction he took his degree in July, 1881, as Doctor in Surgery and Medicine. Nine years of clinical experience in the Subalpine Hospital evoked his special aptitude in diagnosis and treatment, and in 1890 he was nominated Professore Straordinario in special medical pathology in the University of Siena, adding to his duties those of the chair of Propedeutica Clinica Medica in the same seat of learning. In 1891 he was called to Florence to act as professor of clinical pathology at the Istituto dei Studi Superiori, a post in which he acquired an honourable name both as teacher and consultant. Devoting himself to the diseases of children as a specialty, he rapidly became an authority in that branch of the healing art, attracting to his clinique many students from other schools desirous of perfecting themselves in the diagnosis and treatment of such ailments. In 1899 an invitation from the University of Naples to fill the chair of special medical pathology had many temptations for him, an increase of salary included, but he chose to stay in Florence, which he had made a centre of instruction in his favourite department. In the following year he founded the "Clinica Pediatrica" in the Meyer Hospital, and there he did his most effective work, in diagnosis, therapeutics, and instruction. By this time his pupils had become as numerous as they were enthusiastic, and it is due to him that Italy has of late years made such notable progress in circumscribing the area of infantile disease and the mortality caused by it.

For the last ten years he was in much request as a consulting physician in maladies of the adult, numbering in his *clientèle* many of the foreign residents in the Tuscan capital, and among these not a few of the English-speaking world. His kindly conciliatory address and his conversational charm contributed with his undoubted skill and marked success in practice to ensure his acceptance as a consultant, and to maintain him as the friend in circles where he had won his way as the physician. His contributions to medical literature were as valuable as they were numerous and varied. For special notice may be mentioned his treatise on the "Ittirizie" (the several forms of icterus); on the "Rigenerazione Sanguigna nelle Anemie da Distruzione Globulare"; on "Infantile Splenic Anæmia"; "Sulla Patologia del Rene e delle Vie Urinarie"; "Sul Valore Diagnostico e Curativo della Puntura Lombare"; and, not to mention a highly original and practically useful series of studies on meningitis, his exhaustive and still authoritative monograph on "The Causes and Remedies of Italy's High Infantile Mortality." It is in this field, as already indicated, that his chief professional interest lay and in which he reaped the most enduring reward—endearing himself to innumerable families by his opportune and happy intervention in cases which seemed to baffle every diagnosis less prompt than his own.

As a citizen he took part in municipal affairs, professionally as well as in the council chamber, again with a fertility of resource which seldom failed to solve the difficulty of the hour. But the life he led as clinical worker and as active practitioner proved too much for his strength, and it was foreseen that any illness contracted in his later years must have found him an easy victim. The visitation of influenza under which Florence as well as Rome has been adding to its sick list and death-rate made many calls on his time and strength. He fell ill on Feb. 4th, and after a brief struggle with the malady succumbed quite suddenly on Feb. 5th.

CHARLES ALEXANDER MACMUNN, M.A., M.D. DUB., F.C.S., F.R.M.S., J.P., V.D.

THE death is announced of Dr. C. A. MacMunn of Wolverhampton. Dr. MacMunn was born in County Sligo in 1852, the son of Dr. James MacMunn. He received his medical education at Trinity College, Dublin, where he graduated M.B. in 1872, taking also the diploma L.R.C.S. Irel. and L.M. At the time of his death he was consulting physician to the Royal Orphanage, Wolverhampton, having retired from the position of pathologist and physician to the General Hospital, Wolverhampton. His contributions to science were many and varied. He was the author of volumes entitled "Clinical Chemistry of Urine" and "The Spectroscope in Medicine," and at the time of his death he was engaged upon "The Outlines of Clinical Chemistry," which was nearing completion. He made numerous researches in and wrote several papers on physiological chemistry and animal pigments, published in the Transactions of the Royal Society and other scientific societies. He was also a contributor to the "Encyclopædia Britannica" and the author of articles in Quain's "Dictionary of Medicine." He was administrative

medical officer of the North Midland District Territorial Force, a keen soldier, and on the outbreak of the South African war he went out with the special medical staff, was mentioned in despatches, and received decorations for service. He was appointed by Lord Roberts as staff officer on the Commission which inquired into the administration of the medical service during the war. He was a magistrate for Staffordshire and life governor of the University of Birmingham. For many years he had a large practice in Wolverhampton and district until his failing health forced him to relinquish it and retire. Dr. MacMunn's second wife, who survives him, is a sister of the late Captain Webb, the famous swimmer.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Gustav Braun, formerly professor of midwifery in the University of Vienna and director of the Midwives' School. He was a younger brother of the eminent gynæcologist, Professor Carl Braun von Fernwald, and, like him, published numerous works on midwifery and gynæcology. Dr. Bohr, professor of physiology in the University of Copenhagen. Dr. C. Van Cauwenberghe, professor of midwifery and gynæcology in the University of Ghent. Dr. Guillery, formerly professor of forensic medicine in the University of Brussels. Dr. Giuseppe Albini, formerly professor of physiology in the University of Naples.

Medical News.

UNIVERSITY OF OXFORD.—In Congregation on Jan. 26th the following degrees were conferred:—

D.M.—D. W. Carmalt Jones.
B.M. and B.Ch.—G. E. Nelligan, G. E. Downs, and A. W. Donaldson.

The following have been elected members of the Board of Faculty of Medicine:—Sir W. S. Church, Bart., Dr. Samuel H. West, Dr. Walter Ramsden, Dr. E. W. Ainley Walker, Dr. William Williams, Dr. H. M. Vernon, Dr. Alexander G. Gibson, and Dr. J. W. Jenkinson.—In accordance with the provisions of the decree of Convocation of Feb. 7th, the examinations for the degree of Bachelor of Medicine will commence in the Examination Schools for the First B.M. on June 15th and for the Second B.M. on June 14th, and not as previously advertised.

ROYAL COLLEGE OF SURGEONS IN IRELAND: DENTAL EXAMINATION.—W. J. Maher and J. L. Moulang have passed the examination of the First Dental Division A. G. Sheedy and A. C. Wiley have passed the examination of the First Dental Division B. P. I. Wigoder has passed the Final Dental Examination and has been admitted a Licentiate in Dental Surgery.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Max Rothmann, *privat-docent* of Neurology, has been granted the title of Professor.—*Clausenburg:* Dr. Aladár Elfer has been recognised as *privat-docent* of Medical Diagnosis.—*Cologne (Academy of Practical Medicine):* Dr. Stürtz of Metz has been appointed Director of the Tuberculosis Department, in succession to Dr. Dantwiz.—*Gratz:* Dr. Eduard Streissler has been recognised as *privat-docent* of Surgery.—*Kiel:* Dr. F. Klein, of the Chemical and Physiological Institute, has been appointed Extraordinary Professor.—*Königsberg:* Dr. Rhese has been recognised as *privat-docent* of Otiatry and Laryngology.—*Lemberg:* Dr. Ladislaus Mazurkiewicz has been recognised as *privat-docent* of Pharmacognosis.—*Göttingen:* Hitherto there has been no regular Dental Institute, Professor Heitmüller having given instruction to dental students in his own dental surgery. He has now been appointed to a post in Dresden and there is at present no instructor. It is, however, proposed to establish a fully-equipped Dental Institute with the required *docenten.*—*Marburg:* Dr. Martin Benno Schmidt has been offered the chair of Pathological Anatomy in succession to Professor Beneke.—*Rostock:* Dr. F. K. Walter has been recognised as *privat-docent* of Anatomy.—*Vienna:* Dr. Hermann Ulbrich has been recognised as *privat-docent* of Ophthalmology.

LITERARY INTELLIGENCE.—A new series of volumes, under the title of "Notable English Trials," is announced for publication by Messrs. William Hodge and Co., Edinburgh and London. The first volume, entitled "The Trial of the Stauntons," will be issued on March 1st, and will be followed at frequent intervals by volumes dealing with, among others, the trials of Franz Muller, Dr. Palmer, Dr. Lamson, and the Wainwrights. "The Trial of the Stauntons" is edited by Mr. J. B. Atlay. Amongst the editors of the other trials may be mentioned the names of Mr. H. B. Irving, Mr. George H. Knott, Mr. David N. Mackay, and Mr. H. L. Adam. Each volume will be fully illustrated, and the series, when complete, will form a permanent record of the most famous of English trials. The price of each volume will be 5*s.* net.

ST. THOMAS'S HOSPITAL AND THE LAMBETH GUARDIANS.—At a recent inquest held on a woman named Annie Johnson, who died from bronchitis and pneumonia accelerated by starvation and exposure, it was stated that she was found by the police in the street in an exhausted condition and conveyed to St. Thomas's Hospital. After examination by a casualty officer the woman was sent by him in the police ambulance to Lambeth Infirmary, where she died a few hours after admission. The facts were reported to the Lambeth board of guardians, who forwarded them to the hospital authorities. At a meeting of the guardians on Feb. 15th a reply from the secretary of St. Thomas's Hospital was read. It stated that a very full investigation of the circumstances had been held. Had there been a chance of admitting the case it would have been taken in, but the female admitting ward was already overcrowded, and the casualty officer was unwilling to overcrowd it still further by admitting what seemed to him a case for the infirmary. The committee regretted that the case was not taken in if by this means the woman's life could have been saved, but it did not think that this was a case in which any censure was due from it on the action adopted by the medical officer of the hospital. The Rev. Walter Hobbs characterised the reply as extremely satisfactory. Mr. C. W. Baldwin said that what he liked most was the desire of the almoners and the authorities at St. Thomas's Hospital to work harmoniously with the guardians, a view in which the Rev. A. O. Hayes, vice-chairman of the board, acquiesced.

HAPHAZARD MIDWIFERY.—An instance of the fact that, despite the efforts of education authorities and municipal bodies, the old-fashioned type of nurse and midwife still persists was afforded at Wandsworth on Feb. 18th, when Mr. John Troutbeck held an inquiry concerning the death of an infant, aged 19 days, son of a coal porter who lives in Putney Bridge-road. The mother, a woman of more intelligence than is usual among persons in her station, said she was attended in her confinement by a Mrs. West of Sudlow-road, Wandsworth, to whom she paid a fee of 6*s.* Mrs. West on examining the patient recognised that it was a difficult case, for she said she thought it was "all wrong." She also said she thought she could manage, and she proceeded to manage, with the result that the infant's arm was broken. After this accident she said to the mother, "I've broken the child's arm; I couldn't help it." Even then she did not send for a medical man or suggest that one should be called in. When the mother's sister-in-law asked if a medical man should be fetched Mrs. West replied that she knew her business. She bound up the child's arm. The little sufferer was afterwards taken daily to Bolingbroke Hospital till he became too ill. Mrs. West did not attend the inquest. The coroner's officer said she was an old woman. He had found her in bed that morning and she had then told him she was suffering from influenza, but he had been informed that all the Thursday night previous she had been out nursing a patient. Mr. W. G. McDowell, a medical practitioner of Easthill, Wandsworth, who was called in by the parents, gave Mrs. West's account of the matter as he had heard it from Mrs. Smith, the child's mother. Mrs. West called it a breech presentation, though a hand came first, and then a foot after Mrs. West had put the hand back. Subsequently she had great difficulty in getting one of the arms down and in her efforts she broke the limb. Mr. McDowell, in reply to questions, said the case was one which no midwife ought to have undertaken. Trained midwives, in fact, were told that they must not attempt such cases. Dr. L. Freyberger, who made the post-mortem examination, gave the cause of death as heart failure, accelerated by inflammation of the lungs and by the injury to the arm. He agreed that a case of this kind was far beyond the skill of a midwife. The coroner, addressing the jury, said midwives were allowed to practise under very

stringent conditions, one of which was that they should not conduct a difficult case without professional assistance. It would be going too far to say Mrs. West was guilty of manslaughter. She was obviously incompetent to take the case and she caused the injury to the arm, but there was no question of maliciousness. He suggested that the jury should return a verdict in accordance with the medical evidence. The jury adopted this suggestion, and in addition they censured Mrs. West. An official from the London County Council said that the facts would be placed before the committee and there might be further proceedings.

A MEDICAL MAN REWARDED FROM THE CARNEGIE FUND.—At the Thames police court the magistrate, Mr. Dickinson, presented on Feb. 18th the awards made from the Carnegie Heroes Fund to Mr. Nelson Johnstone, Mr. F. Gascoyne, and Mr. F. Levy, in recognition of their conduct in assisting in the removal of Detective-Sergeant Leeson after he had been shot in the early stages of the "Sidney-street Siege." Mr. Johnstone is the medical man who, when summoned by Mr. Levy to the side of the wounded sergeant, made his way to the scene, partially clad, over the roofs of several houses, tended his patient under a heavy fire of pistol-shots from No. 100, Sidney-street, and was himself grazed by a bullet during one of the attempts made to carry the officer to a place of safety. Addressing Mr. Johnstone, to whom he presented a medallion and a cheque for £10, Mr. Dickinson said: "You are a member of a profession which has ever been associated with deeds of heroism and courage and self-sacrifice. Whether those deeds are performed in the pursuit of scientific motives or the amelioration of the sufferings of humanity, or in the plague-stricken districts of Northern China or in the bullet-swept streets of East London, they are equally brave. You yourself have high ideals, evidently, and on Jan. 3rd they moved you to make a heroic endeavour to save the life of a sorely wounded man, and you were willing to imperil and to sacrifice, if necessary, your life in pursuit of those ideals. I congratulate you upon your bravery, and am glad it has fallen to my lot to present you with this token of grateful appreciation." The congratulation and appreciation expressed by the learned magistrate will be heartily echoed by Mr. Johnstone's colleagues in the profession, the credit of which he has so worthily upheld.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The dinner given by this society on Wednesday, Feb. 22nd, at the Hotel Great Central, the President, Dr. Phineas Abraham, being in the chair, was well attended. The President was supported by Sir James Porter, K.C.B., Medical Director-General of the Navy; Sir Henry Morris, President of the Royal Society of Medicine; Dr. Charters J. Symonds, President of the Medical Society of London; and Mr. Ernest Lane, President of the Harveian Society. After the usual loyal toasts, the toast of the "Imperial Forces" was proposed by Mr. McAdam Eccles and responded to by Sir James Porter, who pleaded for encouragement and support for Mr. Haldane in the present military organisation, which was the last word before conscription. The speaker expressed his own dislike of the idea of conscription, which did not, however, arouse any enthusiasm in his audience; but when he dilated later on the advantages of conscription his remarks were received with applause. Mr. Charters Symonds, in toasting the West London Medico-Chirurgical Society and the West London Hospital, took issue with those who stayed away from meetings and contented themselves with reading the papers afterwards. He insisted on the importance of the personal element. He eulogised the great work of the Cavendish lectures and congratulated the society on their forthcoming lecturer. Other toasts were "Kindred Societies," proposed by Dr. Barry Ball, responded to with considerable humour by Mr. Ernest Lane; "The Guests," by Lieutenant-Colonel Wilson, C.B., responded to by Sir Frederick Eve and Mr. Mostyn Pigott; and "The Chairman," by Dr. Arthur Saunders. Mr. James Davis, Mr. Edgar Coyle, Mr. Charles Collette, Mr. Stuart Debnam, and Mr. John Ivimey contributed to the entertainment of the evening with songs.

THE NATIONAL COUNCIL OF TRAINED NURSES OF GREAT BRITAIN AND IRELAND.—On Feb. 18th a Pageant and Masque took place at the Connaught Rooms, Great Queen-street, London, in support of the "Bill for the State Registration of Trained Nurses." The play, designed by Mrs. Bedford Fenwick, and the words for which were written by Miss M. Mallett, portrayed the Evolution of Trained Nursing and the Right of Life to Health. There was a very large attendance of nurses, medical men, and others interested in furthering the reform which it is hoped that State registration will bring about. The pageant opened with a procession of Immortals headed by Hygeia, impersonated by Miss Irene Fergusson. She was attended by the Four Elements, and followed by the Sprites of Nursing and Science attended by their attributes. After these came a procession of saintly women and women of the nursing religious orders of the centuries from Phœbe of Cenchrea of the first century to Elizabeth Fry of the nineteenth. The procession closed with a banner on which was inscribed the name of Florence Nightingale. The third procession was of hospital matrons and the fourth of nurses past and present. Outstanding figures in the procession were "Sairey Gamp," and a male plague attendant whose "beak" respirator gave a grotesque appearance to the face. The last procession, representing Bills, Acts, Societies, and the Nursing Press, was intended to clinch the argument in favour of State registration, and its arrival was greeted with loud applause. The words of the masque, consisting of prologue, petitions, and epilogue, reach a degree of excellence upon which the writer is to be congratulated, as are also those who took part in the production and arrangement of the pageant.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Public Health (Ireland) Bill.

THE Public Health (Ireland) Bill, which has been introduced in the House of Commons by Captain O'NEILL, deals with the sale of meat in urban districts. The principal clause provides that subject to the approval of the Local Government Board, Ireland, any urban council in Ireland may make by-laws with respect to the conduct and management of any abattoir provided by them, and may prohibit within the urban district the sale of any meat otherwise than subject to such regulations as to inspection and otherwise as may be fixed by the urban council in such by-laws. The Bill has been read a first time. Captain O'NEILL, in bringing forward the measure, has the support of Mr. HUGH BARRIE, Mr. MOONEY, Mr. STEPHEN GWYNN, Mr. CHARLES CRAIG, and Mr. EUGENE CREAN.

HOUSE OF LORDS.

TUESDAY, FEB. 21ST.

Asylum Officers' Superannuation.

Lord MONKBRETTON asked His Majesty's Government whether the opinion of the law officers of the Crown had been taken on any question relating to the administration of the Asylums Officers' Superannuation Act, 1909, and whether His Majesty's Government would make any statement on the subject.—Earl BEAUCHAMP replied: The opinion of the law officers of the Crown is being taken by the Home Office with reference to several questions which have arisen under the Asylums Officers' Superannuation Act, 1909, in connexion with appeals to the Secretary of State under Section 15 of the Act by officers and servants of certain asylums. The law officers are being asked by the Home Secretary to advise as to the extent of the Secretary of State's jurisdiction to determine disputes as to the right to superannuation allowance or as to the amount of such allowance, and generally as to the circumstances in which there is any appeal from the decision of a visiting committee under the Act. When the opinion of the law officers is received the effect of it will be made known to visiting committees and others who may be concerned. The Local Government Board has already obtained from the law officers an opinion as to the proper construction to be placed on Section 12 of the Act with reference to the fund out of which superannuation allowances and gratuities are to be paid, and the effect of this opinion is being communicated in a circular letter to the visiting committees of asylums in England and Wales.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 15TH.

Poor Relief and Medical Certificates.

Mr. GOULDING asked the President of the Local Government Board whether the latest official declaration of policy from his department with regard to relief to the respectable aged was the circular of the President of August 4th, 1900, printed in the thirtieth annual report, in which it was laid down that such persons were not to be urged to enter the workhouse at all, unless from actual infirmity, &c., but that, irrespective of any medical certificate, adequate outdoor relief should be granted to them; whether it was customary in accordance with this circular in most unions to grant, without any medical certificate and irrespective of any specific infirmity, outdoor relief to such deserving aged persons as were not entitled to old-age pensions; and whether the draft order as to out-relief, the issue of which was under consideration, would prohibit such outdoor relief in respect merely of old age. The honourable Member also asked whether the right honourable gentleman was aware that the effect of the proposed Outdoor Relief Order would be to transfer the discretion as to the grant of outdoor relief to aged persons from the guardians to the medical officer, and to make it dependent on

his giving a certificate that the aged person was suffering from some specific disease; and whether, in view of such a marked reversal of policy with regard to the deserving aged as compared with that promulgated in the Circular of the Local Government Board of August 4th, 1900, some opportunity would be afforded to the House of Commons to express an opinion on the subject before, by the signing of the proposed new Order, the reversal of policy was carried into effect.—Mr. BURNS (answering both questions) said: I see no reason to dissent from the view that the circular to which the honourable Member refers may be regarded as the latest declaration of the policy of the Local Government Board with regard to the relief of the aged deserving poor, and I am happy to think that the principles there laid down are very generally acted upon by boards of guardians. I may point out that it would not be necessary under the order proposed by the Departmental Committee that a medical officer should certify that an aged person is suffering from some specific disease. A certificate that he is infirm through old age would seem to satisfy the requirements of the Order. The report of the committee is receiving my careful consideration, and I do not propose to take any action upon it at the present moment.

Rats and Plague.

Mr. GEORGE ROBERTS asked the President of the Local Government Board whether it had been proved that rats and rabbits in East Anglia were infected with plague bacillus; whether any cases had arisen of such infection being carried to human beings; and whether action was being taken in the matter.—Mr. BURNS answered: A certain number of rats and rabbits in East Anglia have been found to be infected with plague. Four suspected cases of human plague occurred in this area as long ago as September last, but since then no further cases have been observed. Both the local authorities and my department have been taking active measures in the destruction of rats and the investigation of the extent of prevalence of plague amongst rodents and the delimitation of the affected area. Careful watch is also being kept at the ports against the introduction and spread of rat plague.

THURSDAY, FEB. 16TH.

Precautions Against Plague.

Mr. GINNELL asked the Secretary of State for Foreign Affairs whether, in view of the danger to unoffending nations from the spread of plague and other preventable diseases, he could see his way to initiating some international movement towards more general observance of the fundamental laws of health and sanitation; and whether British consuls in the principal foreign cities would be asked to report on these subjects and on any precautions now being taken against plague.—Sir EDWARD GREY replied: In 1903 an International Convention was concluded at Paris with the object of applying in a systematic manner the most modern methods of resisting the spread of plague and cholera. His Majesty's Government and most European countries are parties to this convention, and it is open to any country which has not yet adhered to do so at any time. His Majesty's Consular officers abroad always report the appearance of any case of plague, cholera, or yellow fever within their consular district, and the special measures or regulations put into force for the purpose of checking the spread of the disease. During the continuance of any outbreak they are expected to furnish short telegraphic reports at least weekly, showing the number of cases and deaths and the name of the locality affected, and in the case of the present epidemic in Manchuria reports are received almost daily.

Health Measures in Tientsin.

Earl WINTERTON asked the right honourable gentleman whether his attention had been called to the protest of the European doctors at Tientsin against the refusal of the foreign consuls to order a sanitary cordon round the European settlement; and whether he would instruct His Majesty's consuls at Tientsin and elsewhere to support the proposal of the foreign medical officers.—Sir EDWARD GREY replied: His Majesty's Government have not so far heard of the protest referred to, but His Majesty's Minister at Peking has been asked by telegraph for a report on the matter.

Inspector of Lunatics in Ireland.

In reply to Mr. O'SHAUGHNESSY, Mr. BIRRELL (Chief Secretary to the Lord Lieutenant of Ireland) said: I am well aware and am daily reminded by applicants that the post of inspector of lunatics in Ireland is about to become vacant. In filling the office due regard will be had to the experience of candidates in the management of lunatic asylums and in the treatment of the insane.

The Midwives Bill.

Mr. ROBERT HARCOURT asked the President of the Local Government Board whether it had been brought to his notice that there was a growing feeling of opposition to certain provisions in the two successive Midwives Bills introduced by the Government last session, notably the proposed importation for the first time of the machinery of the Poor-law, and the proposed annual renewal of the midwives' registration; whether, with a view to securing the much-needed amendment of the Midwives Act, he would consider the desirability of omitting the provisions to which so much objection was taken; and whether it was intended to introduce any measure on the subject during the present session.—Mr. BURNS answered: I understand that the President of the Council has a Bill ready for introduction from which it is proposed to omit what is known as the annual renewal of midwives' registration. The provisions of the Bill dealing with the payment of medical men called in at the suggestion of midwives were included in the Bill in order to give to medical men some security for their fees, and I should expect that the omission of the provisions would cause disappointment to the medical profession.

Mr. HARCOURT: Is it to be understood that the provisions on the latter point are the same as in the last Bill?

Mr. BURNS: I am not in a position to state that definitely as I am to receive two or three deputations.

The Royal Commission on Vivisection.

Mr. IAN MALCOLM asked the Home Secretary when the report of the Royal Commission on Vivisection would be published.—Mr. CHURCHILL answered: I am informed that the report is under consideration, and that although no date can yet be fixed, it is hoped that it may be submitted shortly.

The Medical Services of India.

Mr. KELLY asked the Under Secretary of State for India whether the attention of the Secretary of State had been drawn to the resolution passed at the meeting of the Indian National Congress, held at Allahabad on Dec. 28th, 1910, thanking him for his despatch regarding the employment in the superior posts of the civil medical service and requesting the Government of India to take early action in the direction indicated by the Secretary of State for India, and pointing out that in the interests of the public, the medical service, and the profession, as well as in the interests of economy in public expenditure, it was highly desirable that a distinct Indian civil medical service should be constituted, wholly independent of the Indian military medical service; whether he had yet received from the Government of India any report on the various issues concerning the various medical services of India therein referred to; and when did he propose to bring the higher grades of the medical service within reasonably easy access of Indian medical men.—Mr. MONTAGU wrote, in reply: The resolution to which the honourable Member refers has not yet reached the Secretary of State. A despatch on the general question has been received from the Government of India and is under consideration. As regards the final sentence of the honourable Member's question I have nothing to add to the information that I have already given to him.

MONDAY, FEB. 20TH.

Children in Metropolitan Workhouse Infirmaries.

Sir ALBERT SPICER asked the President of the Local Government Board whether he would state the number of children at present maintained in the workhouses of the metropolis and the workhouse infirmaries of the metropolis respectively, differentiating between those over and under three years of age.—Mr. BURNS replied: According to the latest returns available there were on July 1st last 21,043 children of all ages in metropolitan Poor-law institutions, of whom 1226 were in workhouses. The number of children under three in infirm wards was 106, and of children over three 34. As to children in other workhouse wards the numbers were, children under three 706 and children over three 380.

The Water-supplies of England and Wales.

Mr. REMNANT asked the President of the Local Government Board what steps he proposed to take as a result of the recommendation of the Joint Select Committee on the Water-supplies (Protection) Bill, July 18th, 1910, which agreed with the recommendations of the Royal Commission on Sewage Disposal and of the Royal Commissions on Water-supply of 1869 and on Metropolitan Water-supply of 1893, all of which asserted the principle that there was urgent need for a survey, at once comprehensive and in detail, of the water-supplies and water needs of the country and for the adoption of measures for conserving the supply and disposing of it to the best advantage.—Mr. BURNS answered: In pursuance of an order of the House a return is being prepared relating to the water-supply of every district in England and Wales. This will include information as to the quantities of water now being supplied in each district and as to what further quantities could be supplied from sources at present in use, together with the information as to the character and situation of these sources. I have also obtained the authority of the Treasury to the appointment of a geologist on the staff of my department. I am not without hope of introducing a Bill giving effect to the recommendations of the commission referred to.

Sleeping Sickness in Rhodesia.

Mr. NIELD asked the Secretary of State for the Colonies whether large areas of country in Rhodesia had been infected by the malady known as sleeping sickness, and had been declared proscribed areas; whether, in such areas, all cultivation and other work had been suspended; and, if so, what organised effort was being made, and by whom, to stamp out the disease and destroy the cause of infection.—Mr. HARCOURT wrote in reply: Yes, Sir, considerable areas in the Luapula and Luangwas valleys have been declared sleeping sickness areas. I do not think that cultivation is necessarily suspended, though it is necessary sometimes to clear areas near the rivers and the disease is a most serious hindrance to ordinary life and industry. Travelling is forbidden without permits, villages have been removed at the expense of the Government, and the British South Africa Company is taking various other measures in coöperation with the Belgian authorities for dealing with the sickness. The company has strengthened its medical staff and is now sending out a special commission of investigation with a scientific staff and a fully equipped laboratory.

Mr. NIELD also asked the right honourable gentleman whether he had any information as to the destitution caused among the colonists and natives of Rhodesia consequent upon the prevalence of sleeping sickness over large areas, which had been proscribed; whether any, and what, steps had been, or would be, taken to afford relief where necessary, and by whom; and whether there was adequate medical assistance to grapple with the known cases and to enforce precautions against the spread of the disease.—Mr. HARCOURT replied: I am not aware of any special destitution, certainly not among the Europeans, of whom there are very few in North-Eastern Rhodesia. But the prevalence of this terrible disease must necessarily cause suffering among the populations affected. In reply to another question I am indicating the measures taken by the British South Africa Company, which is responsible for the government of the country, to grapple with the disease.

TUESDAY, FEB. 21ST.

Measles at the Royal Naval Colleges.

Mr. TYSON WILSON asked the First Lord of the Admiralty whether, in connexion with the outbreak of measles at the Royal Naval Colleges of Dartmouth and Osborne, he could state whether efficient precautions were taken in the making of the uniforms of the naval cadets to prevent the possibility of such outbreaks emanating from that source; whether he was aware that the uniforms of the cadets at the Royal Military Academy were made in Government workshops under strict sanitary conditions; and whether he would inquire as to whether similar precautions were taken in the making of the uniforms of the naval cadets.—Mr. MCKENNA replied: The Admiralty have no reason to suppose that the firms who are employed by parents of naval cadets to make uniforms do not take proper precautions for the protection of their customers, or that infectious disease has ever been introduced into the colleges in the manner suggested.

Vaccination in the Navy.

Mr. POINTER asked the First Lord of the Admiralty whether, in view of the fact that the number of small-pox cases in the Navy had been

very small for the last few years, owing to the strict measures of isolation now adopted and the numerous improvements in the general treatment of the men, he could see his way to extend to naval recruits the same liberty of conscience in regard to vaccination as had already been granted to other branches of the Government services.—Mr. MCKENNA wrote in reply: As the danger of the spread of infection is very largely increased by the peculiar conditions of life on board ship, it is not proposed to relax the present regulations with regard to vaccination.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.

Modern Methods of Water Purification. By John Don, F.I.C., A.M.I.Mech.E., and John Chisholm, A.M.I.Mech.E., Engineer and Manager of the Airdrie, Coatbridge, and District Waterworks. Price 15s. net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

A Text-book of Gynæcological Surgery. By Comyns Berkeley, M.A., M.D., B.C. Cantab., F.R.C.P. Lond., M.R.C.S. Eng., and Victor Bonney, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng., M.R.C.P. Lond. Price 25s. net.

CHURCHILL, J. AND A., London.

Urine Examination Made Easy. A Plan of Examination with the Common Tests Fully Described. By Thomas Carruthers, M.A., M.B., Ch.B. Second edition. Price 1s. 6d. net.

Vicious Circles in Disease. By Jamieson B. Hurry, M.A., M.D. Cantab. Price 6s. net.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

University of London. Francis Galton Laboratory for National Eugenics. Eugenics Laboratory Memoirs. XII. Treasury of Human Inheritance. Parts V. and VI. Section XIV.A: Hæmophilia. By William Bulloch, M.D., and Paul Fildes, M.B., B.C. With 17 Plates of Pedigrees and 1 Plate of Illustrations. Plates XXXIV.–L. Plate N. Pedigrees, Figs. 373–607, 493 bis. Price 15s. net.

FISCHER, GUSTAV, Jena.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Dreizehnte Lieferung. Band II. Physiologie des Stoffwechsels. Physiologie der Zeugung. Erste Hälfte. Price M.5.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Cholera and its Treatment. By Leonard Rogers, M.D., F.R.C.P., F.R.C.S., B.S., I.M.S. Price 10s. 6d. net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

Modern Methods of Sewage Purification: A Guide for the Designing and Maintenance of Sewage Purification Works. By G. Bertram Kershaw, Consulting Engineer. Price 21s. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Alcoholic Fermentation. By Arthur Harden, Ph.D., D.Sc., F.R.S., Head of the Biochemical Department, Lister Institute, Chelsea. Price 4s. net.

WITHERBY AND CO., 326, High Holborn, London, W.C.

The Liverworts, British and Foreign. By the Right Honourable Sir Edward Fry, G.C.B., with the Assistance of Agnes Fry. Price 2s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALCOCK, G. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Creech St. Michael District of the county of Somerset.

BEALE, PEYTON T. B., F.R.C.S. Eng., has been appointed Consulting Surgeon to the Great Northern Central Hospital.

BELL, CLIFFORD T., M.B., C.M. Aberd., has been appointed Resident Medical Officer at the Oldmill Poorhouse, Aberdeen.

BRASHER, CHARLES WILLIAM JAMES, M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Registrar to the Bristol Royal Infirmary.

CAMPBELL, SYDNEY, M.B., Ch.B. St. And., has been appointed Medical Officer to the Dundee Post-office.

CHAPPLE, HAROLD, B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CLARKE, WILLIAM BRUCE, F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 42.

CUNLIFFE, ERNEST NICHOLSON, M.D. Vict., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 7 and 8, and to be attached more particularly to Salford and Manchester County Courts.

DAVIDSON, PATRICK MOIR, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 9, and to be attached more particularly to Macclesfield, and Congleton and Sandbach County Courts.

HAY, PERCIVAL J., M.D., Ch.B. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 16, with a view to his being employed in all Ophthalmic Cases which may arise in the Circuit.

HEREFORD, CHARLES FRANCIS ALEXANDER, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Dental Anæsthetist to the Bristol Royal Infirmary.

JOHNSON, G. W., M.B., B.S., has been appointed House Physician at University College Hospital.

THOMSON, HERBERT CAMPBELL, M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 40.

TUKE, A. L. S., M.B., M.Ch. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dunfermline District of the county of Fife.

WILLIAMS, D. LLEWELYN, F.R.C.S. Edin., D.P.H., has been appointed Medical Officer of Health to the Denbigh County Council.

WRIGHT, ANDREW JOHN METFORD, M.B., B.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgical Registrar to the Bristol Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Assistant Medical Electrician.

ASHTON-UNDER-LYNE UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BURY AND DISTRICT FEVER AND SMALL-POX HOSPITALS AND SANATORIUM FOR CONSUMPTIVES.—Medical Superintendent. Salary £400 per annum.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer, as House Physician for first six months and House Surgeon for ensuing six months. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary at rate of 100 guineas per annum.

DERBY, COUNTY BOROUGH OF.—School Medical Officer. Salary £250 per annum.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

DUMFRIES, COUNTY AND BURGHS OF.—Medical Assistant to Medical Officer of Health and School Medical Officer. Salary £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and laundry. Also Officer for the Electrical Department.

EDINBURGH ROYAL INFIRMARY.—Superintendent. Salary £600 per annum, with house, coal, and light.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, &c. Also Honorary Dental Surgeon.

GARTLOCH MENTAL HOSPITAL, near Glasgow.—Resident Assistant Physician. Salary £125 per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging. Also Casualty House Surgeon for six months. Salary at rate of £50 per annum, with board and lodging.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, and attendance.

KING EDWARD VII. MEMORIAL SANATORIUM FOR SHROPSHIRE.—Resident Medical Officer, unmarried. Salary £200 per annum, with board and residence.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodging. Also Honorary Dental Surgeon and Honorary Assistant Dental Surgeon.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.

LLANYBYTHER, CARMARTHENSHIRE, WEST WALES SANATORIUM.—Medical Superintendent. Salary £250 per annum, with board and residence.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Physician and Assistant Physician.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Resident Medical Officer, unmarried. Salary £90 per annum.

MILLER GENERAL HOSPITAL FOR SOUTH EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon, each for six months. Salaries £100 and £80 per annum respectively, with board, attendance, and laundry.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer on Public Health.

NEW HOSPITAL FOR WOMEN, Euston-road.—Senior Assistant (female) in Out-patient Department.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Honorary Anæsthetist.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, &c.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—House Physician. Salary £110 per annum, with board and residence.

ROYAL EAR HOSPITAL, Soho.—Honorary Assistant Anæsthetist.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Anatomy. Salary at rate of £350 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence, attendance, and midwifery fees.

ST. THOMAS'S HOSPITAL.—Obstetric Physician.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHEFFIELD ROYAL HOSPITAL.—Honorary Assistant Ophthalmic Surgeon, Honorary Physician for Skin Diseases, and Honorary Assistant Dental Surgeon.

SHEFFIELD UNIVERSITY.—Demonstrator in Anatomy. Salary £150 per annum.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence. Also Senior House Surgeon. Salary £100 per annum, with board, washing, and residence.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

TAUNTON UNION, ST. JAMES DISTRICT.—Medical Officer. Salary £85 per annum.

TOWER HAMLETS DISPENSARY, Whitehorse-street, Stepney, E.—Resident Medical Officer. Salary £100 per annum, with apartments, washing, light, and attendance.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Second Demonstrator.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £30 per annum, with board, residence, and washing. Also Honorary Surgeon.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry.

WORCESTER COUNTY AND CITY ASYLUM, Powick, Worcester.—Third Assistant Medical Officer. Salary £140 and all found.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Mold, in the county of Flint.

Births, Marriages, and Deaths.

BIRTHS.

HUNTER.—On Feb. 19th, at Normanhurst, Royston Park, Hatch End, the wife of Mark O. Hunter, M.A., M.R.C.S., of a daughter.

PERKINS.—On Feb. 18th, at "Comberton," Tunbridge Wells, to Dr. Philip and Mrs. Perkins, a son.

PHILLIPS.—On Feb. 14th, at Hamilton House, Penge, the wife of Harry Harding Phillips, M.R.C.S., &c., of a son.

PORTEOUS.—On Feb. 18th, the wife of Dr. Porteous, Newbury House, Weston-super-Mare, of a daughter.

MARRIAGES.

CROMPTON—MAY.—On Feb. 14th, at St. Barnabas, Dulwich, Kenneth Edward Crompton, B.A., M.B., B.C., of Peachland, British Columbia, to Elsie, eldest daughter of Richard J. May, of Pond House, Dulwich.

HATFIELD—JAMES.—On Feb. 16th, at Lewisham, Henry Francis Hatfield, L.R.C.P., M.R.C.S., to Helena Emily James, widow of the late Charles James, and third daughter of Alexander Hunter, L.R.C.S. Edin.

DEATHS.

BENNETT.—On Feb. 16th, at College House, Hammersmith, W., Charles Henry Bennett, M.D., J.P., late Honorary Surgeon-Major, 3rd City of London R.V.

CURNOCK.—On Feb. 13th, at Kendalcroft, Epping, George Dennis Curnock, L.D.S. Eng.

EDMUNDS.—On Feb. 16th, at Sussex-square, Brighton, James Edmunds, M.D., M.R.C.P., aged 79 years.

MCGEAGH.—On Feb. 17th, at Bournemouth, James P. McGeagh, M.D., the beloved husband of Mary McGeagh, of Bradstone, Branksome-avenue, Bournemouth.

MACMUNN.—On Feb. 18th, at 5, Lonsdale-road, Wolverhampton, Charles Alexander MacMunn, M.A., M.D., V.D., J.P., aged 58 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INEBRIETY.

S. A. writes desiring to be referred to one or two authoritative books on inebriety. If our correspondent wants a work dealing specially with the medical aspect of inebriety, he will probably not find anything better in English than the old book by Norman Kerr—"Inebriety or Narcomania" (Lewis, third edition, 1894), despite some teetotal exaggerations. There is no modern book devoted solely to the subject from the point of view of treatment, and we do not think that the articles on it in the medical dictionaries are very satisfactory either. With Kerr's book should be read the text-books on insanity—with special mention of Legrain's article in Hack Tuke's "Dictionary of Psychological Medicine"—and works dealing with particular methods of treatment, such as Milne Bramwell or Tuckey *qua* hypnotism, the annual reports of the Norwood Sanatorium (Dr. F. Hare) as to drug treatment, &c. If, on the other hand, he is interested in the whole question of alcoholism, and wants books on its medico-sociological aspect, we can safely recommend "The Drink Problem," edited by Dr. T. N. Kelynack (Methuen, 1907). There are also some good, perhaps better, foreign books of the same sort—e.g., "Der Alkoholismus," by A. Grotjahn (Leipzig, Wigand, 1898), and the "Traité de l'Alcoolisme" of Triboulet, Mathieu, and Mignot (Paris, C. Naud, 1905). Dr. W. C. Sullivan's volume, "Alcoholism" (Nesbit, 1906) and Dr. Arthur Shadwell's "Drink, Temperance, and Legislation," are valuable studies of the question from the economic side. It is curious with all that is talked and written about the subject it should be so difficult to find a work that is not more or less disfigured by rhetoric or obscured by prejudice.

THE FEEDING OF INFANTS.

To the Editor of THE LANCET.

SIR,—Can any of your readers tell me whether the two-hourly feeding commonly recommended for an infant in the first month or six weeks of life is founded on theory or on the natural demands of a normal infant? I am, Sir, yours faithfully,

Kilbarchan, Renfrewshire, Feb. 13th, 1911. THOS. CARRUTHERS.

*** The recognised method among English-speaking nations of feeding the new-born infant every two hours appears to be founded solely on usage and authority. There appears to be little physiological justification for such a practice, although it has been sanctioned and perpetuated by the writings of the most eminent authorities in this country and in America and by the practical example of the large maternity hospitals in London, Dublin, and in the provinces. Frequent feeding of this character is not practised on the continent. Dr. W. Camerer, writing in the last edition of Pfaundler and Schlossmann, advocates intervals of three and a half hours during the first three months of life, with an extension to four hours as the infant grows older. While in Professor v. Hutinel's text-book on the diseases of children, a work which may be said to be representative of French views on this subject, the intervals recommended for feeding the new born are set at two and a half hours. Dr. A. Czerny of Breslau, one of the greatest of living authorities on infant feeding, says: "The breast-fed should not be fed at all upon the first day of life, and on the following day only three or four times in the 24 hours. Afterwards five or six feedings in the day are sufficient. These directions are not given arbitrarily, nor do they follow any authority, but they are derived from observation of numerous breast-fed children who have had their food when they wanted it, and not according to the advice of a physician." Dr. Czerny is a strong advocate of long intervals between feeding; indeed, he declares in favour of prolonging rather than shortening the intervals. In cases of malnutrition or restlessness he says the minimum interval of feeding should be three hours.—ED. L.

"STANDARD BREAD."

A CORRESPONDENT points out that the controversy on the relative merits of stone-ground and roller-milled flour, which has been recently revived with some ardour and success, was commenced in THE LANCET 30 years ago. In a letter which was published in this journal on June 10th, 1882, Mr. Stephen Harding Terry, M.I.C.E., referred to the probable future effect of roller milling on the health of the nation, the suggestion to introduce this method being apparently at that time a fresh one. We take one sentence from Mr. Terry's letter, which shows that his predictions and fears were amply justified. "When it is borne in mind," he wrote, "how large a portion of the population of this country (more especially children) live principally on bread, in some form or other, and that whilst growing they require a larger proportion of bone- and tissue-forming material than at a later period, I think the medical and engineering professions will agree with me when I state that the processes involved in the preparation of bread from grain should be such as to

leave in the resulting 'loaf' those elements which entitle it to its ancient name 'the staff of life,' and that the changes in the chemical composition of bread which are likely to follow an extended use of improved mill machinery ('high grinding') are well worthy the attention of medical men." This is an interesting contribution to the history of the roller-mill method of separating flour from the wheat grain.

ANCIENT DRUG POTS AND PILL SLABS.

AT the sale at Christie's on Feb. 14th of the collection of porcelain and other objects of art formed by the late Sir John Evans, K.C.B., F.R.S., some time president of the Society of Antiquaries and a trustee of the British Museum, the undermentioned lots, in the Lambeth and other pottery sections, were disposed of at the prices indicated:—

A drug pot, painted with a winged mask in blue and the date 1668, and inscribed LEPVLM. WLF (extract of wolf's lungs) 7¾ in. high—6 guineas.

Two drug pots, nearly similar, painted with cherubs and shells in blue, and inscribed THER: LOND (London treacle) and C: CYNOSBA (conserve of the pips of the dog rose), 7¾ in. high—8 guineas.

A drug pot, painted with cupids, shells, and foliage, and inscribed THER: ANDRO (Venice treacle, antidote to poison), formerly the property of Sir A. W. Franks, K.C.B.; and one, with birds and foliage, inscribed V: ÆGYPTIAC (mullein), 8½ in. high—5½ guineas.

A drug pot, painted with cherubs and foliage, and inscribed PHILº. LONDE, 7¼ in. high, and one, nearly similar, inscribed V. CERAT, 7¼ in high—6 guineas.

A large drug pot, inscribed E. LENITV, 11 in. high, formerly the property of Sir A. W. Franks, K.C.B.; a smaller jar, similarly inscribed, 7 in. high, from the same collection; and a jar inscribed U. NICOTIAN, 8 in. high—12 guineas.

A small drug pot, painted with birds and foliage in blue, and inscribed CONF. DE. HYACINTH, 3½ in. high, and a pair of small pots, with cherubs, and inscribed P. TARTARAE and P. FOETIDAE, 3½ in. high—6 guineas.

A drug pot, painted with the arms of the Apothecaries' Company, and Chinese figures in blue, green, and yellow, 9 in. high—10 guineas.

An octagonal pill slab, painted with the arms of the Apothecaries' Company in blue, and motto in black, 10½ in. by 8½ in.—7 guineas.

Another, nearly similar, with the arms and motto of the Apothecaries' Company in blue, 10½ in. square—7 guineas.

Another, with the arms of the Apothecaries' Company and the City of London in blue, 10½ in. square—8½ guineas.

Another, painted with the arms of the Apothecaries' Company in blue, yellow, and green, 11 in. by 9¾ in.—8 guineas.

A shield-shaped pill slab, painted with the arms of the Apothecaries' Company in blue, 11 in. by 10½ in.—7 guineas.

A drug pot, with spout, of Wincanton delft, inscribed RHABARB, 7 in. high, and one, of Liverpool delft, inscribed S. CYDONIAM, 6½ in. high—6 guineas.

ENCEINTE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 18th your correspondent "Biancus" says: "There is a striking line in the Bible which says, 'A woman shall compass a man.' ..... The word compass here is surely used in the sense of '*entourer*,' to enclose, or surround. The French is 'La femme environnera l'homme.'" It may interest him to know that there is a French Bible published in 1904, La Haye Imprimerie, C. Blommendaal, C. H. Voorhoeve, successeur, which gives "une femme entourera l'homme."—I am, Sir, yours faithfully,

Feb. 18th 1911. EDW. MAHONY.

PISTOLS AND THE HOUNDSDITCH MURDERS.

IN summing up to the jury at the inquest upon the body of Sergeant Bentley of the City police, one of the victims of the "Houndsditch murders," Dr. Waldo made observations upon the subject of the indiscriminate carrying of pistols which are in accord with what has been said frequently in the columns of THE LANCET. He seems, however, to have contemplated an unnecessary limit in the restrictions which he suggested should be imposed, if he is rightly reported as having said, "Apart from any illegal act, the possession of deadly weapons by any alien should be forbidden under all circumstances, and any offence against this regulation should be punishable by a fine and imprisonment for a first offence and by permanent deportation for a second offence." The possession of deadly weapons of the type of a magazine pistol should be forbidden to everyone in all circumstances, except to householders and others permitted by licence to keep them in their homes or other premises for the purpose of defending those homes or premises against attack. It should be a punishable offence in anyone to carry a pistol on his person in any place outside the limits of his "curtilage"—of course, with proper exceptions. No one suggests, for example, that a person buying a pistol for the defence of his house, and for his own protection in it, and publicly known to possess a licence for the purpose, should be precluded from acquiring skill in its use by practising at a target in a suitable place. It should be possible in many cases to prevent the introduction of fresh weapons by aliens on their entering the country, but there are plenty of criminal or foolish British subjects who carry pistols and who should be prevented from doing so as far as this is possible. Absolute prevention is, of course, out of the question.

A DESERVING CASE.

A WELL-KNOWN physician has brought the following circumstances before us. A gentleman formerly engaged in business firms in India had the misfortune to lose his right lower limb above the knee. He is now fitted with an artificial limb, is strong and able to walk about fully, but there is no longer any opportunity for him to take up his work again in India. His training and experience fit him admirably for secretarial work. Our correspondent personally knows the patient and his family, and formerly knew his father, and can testify to the thoroughly meritorious nature of the case. He therefore appeals to readers of THE LANCET for their assistance to obtain for an unfortunate and deserving man some secretarial duties.

M.C.H., a medical man, asks for advice concerning the treatment of a case of rapidly growing warts near the frænum. No history of gonorrhœa is given. Some three months ago the first wart appeared and grew rapidly. This was removed and submitted to pathological examination. It was quite soft and waxy and had a broad base. It was a simple papilloma and showed no evidence of malignancy. A month afterwards a similar growth made its appearance about an eighth of an inch higher up the frænum. Its appearance was remarkably rapid—within 24 hours. Now three more have appeared all within a few hours. The rapidity of the growth makes him anxious.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, and April, 1911:—

March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
" 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
" 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 22nd, 1911.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 16	30·30	S.W.	0·05	57	52	42	45	46	Overcast
" 17	30·05	S.W.	...	80	56	46	47	49	Fine
" 18	29·89	S.W.	...	63	56	49	50	51	Raining
" 19	29·44	W.	0·15	85	47	38	39	39	Cloudy
" 20	29·92	W.	...	79	49	36	36	37	Cloudy
" 21	30·06	S.W.	...	56	54	37	41	42	Raining
" 22	29·64	W.	0·11	89	53	42	46	49	Cloudy

The following journals, magazines, &c., have been received:—Annales de Gynécologie et d'Obstétrique, Revue de Gynécologie, American Medicine, Quarterly Journal of Microscopical Science, The Canadian Practitioner, Indian Medical Journal, Symons's Meteorological Magazine, British Journal of Dental Science, Revue Psychiatrie, Archiv Experimentelle Pathologie und Pharmakologie, South African Medical Record, Archives de l'Institut Pasteur de Tunis, The St. Louis Medical Review, Guy's Hospital Gazette, Il Tommasi, Archives Générales de Médecine, Centralblatt fur Allgemeine Pathologie und Pathologische Anatomie, Recueil

d'Ophthalmologie, Il Policlinico, The Medical Chronicle, Birmingham Medical Review, American Journal of Obstetrics, Indian Medical Record, Journal of Nervous and Mental Diseases, Nederlandsch Tijdschrift voor Geneeskunde, The Official Gazette of the United States Patent Office, Paris Médical, The Therapist, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, The British Journal of Dermatology.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James): at 8 P.M.

Paper:

Mr. A. A. H. Johnson and Mr. A. Hopewell Smith: A Case of Multiple Supernumerary Teeth preceding a Central Incisor.

Casual Communications:

Mr. T. Stordy: Absorption of a Permanent Molar Due to an Unerupted Premolar.

Mr. W. de C. Prideaux: (1) Three Cases of Torus Palatinus; (2) Skull from a Barrow showing somewhat Symmetrical Mandibular Exostoses.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bt.): at 5.30 P.M.

Dr. Wilfred Edgecombe: Some Observations on Low Blood Pressure.

WEDNESDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—F. A. de T. Mouillot, A. Manuel): at 5.30 P.M.

Dr. Ringrose Gore (Llandrindod Wells): Climatic and Balneological Treatment of Neurasthenia.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos street, W.: at 8 P.M.

Specimens:

Dr. Hardley Holland: Sarcoma of Uterus with Hæmatometra.

Dr. R. D. Maxwell: (1) Ovarian Cyst with Thyroid Gland Contents; (2) Hydatidiform Mole with associated Ovarian Enlargement.

Dr. H. Macnaughton-Jones: Hydrosalpinx and Peritoneal Cyst; Uterus Removed by Hysterectomy followed by Double Phlebitis.

Dr. Paramore: Diffuse Fibroma of the Ovary which has Undergone Central Degeneration with Extravasation of Blood.

Short Communication:

Dr. Blair Bell: Primary Abdominal Pregnancy in a Rabbit.

Epidiascopic Demonstration:

Miss McIlroy: The Origin of the Follicle Cells of the Ovary.

Paper:

Dr. Blair Bell: The Nature of Fluid contained in a Hæmatosalpinx.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris), at National Hospital, Queen-square, W.C.: at 8.30 P.M.

Dr. Kinnier Wilson: Progressive Lenticular Degeneration (a Familial Disease with Cirrhosis of the Liver).

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

Cases and Specimens

By Professor Hobday, Mr. Herbert Tilley, Dr. L. H. Pegler, Mr. Gay French, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—R. W. Collum, Mrs. Dickinson Berry): at 8.30 P.M.

Discussion

On the Use of Scopolamine and Morphine, Atropine, and similar Drugs by Injection before Inhalation Anæsthesia (opened by Dr. Dudley Buxton).

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Pathological Evening. Specimens will be exhibited by Dr. F. J. Poynton, Mr. A. E. Barker, Dr. P. Weber, Dr. R. C. Jewesbury, Mr. C. Symonds, Dr. H. M. Turnbull, Mr. T. B. Layton, Dr. E. H. Shaw, Dr. Spilsbury, Mr. M. Heath, and Mr. T. P. Legg.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

RÖNTGEN SOCIETY, 66, Victoria-street, Westminster, S.W.

THURSDAY.—Mr. A. A. C. Swinton: Some Experiments with a 10,000 volt Storage Battery.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital.

FRIDAY.—8.30 P.M., Dr. H. Pritchard: The Present Position of Vaccine Therapy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Fossil Remains of Man and their Bearing on the Origin of Modern British Types (illustrated by means of the epidiascope). (Hunterian Lecture.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

THURSDAY.—5 P.M., Dr. A. E. Boycott: Ankylostoma Infection (Milroy Lecture).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. Pritchard: The Treatment of Common Symptoms among Infants.

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Taylor: Eye Affections in Nervous Diseases.

WEDNESDAY.—4 P.M., Sir A. P. Gould: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. Taylor: Anæmia.

THURSDAY.—4 P.M., Mr. J. Berry: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. C. Hort: The Use and Abuse of Tuberculin.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: Therapeutics.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Some Medical Aphorisms.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. D. Robinson: Gynæcological Obstetrical Subject.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carling: Surgical Treatment of Aneurysm.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Moon: Rheumatic Manifestations in Childhood.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Demonstration of Selected Skin Cases.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. C. Nourse: Accessory Sinuses.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Cerebral Abscess.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Stewart: Intracranial Tumour.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Nose and Pharynx, Diseases of Lymphatic Glands. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Demonstration—Dr. Batten: Medical Cases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Genito-urinary System, Infections, Tumours, Calculus, Tuberculosis. (Special Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Diseases of the Skin Due to Bacillary Infection.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Demonstration:—Dr. B. Shaw: Pathological Specimens.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. C. Melland: Some Further Aspects of Heart Disease. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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